

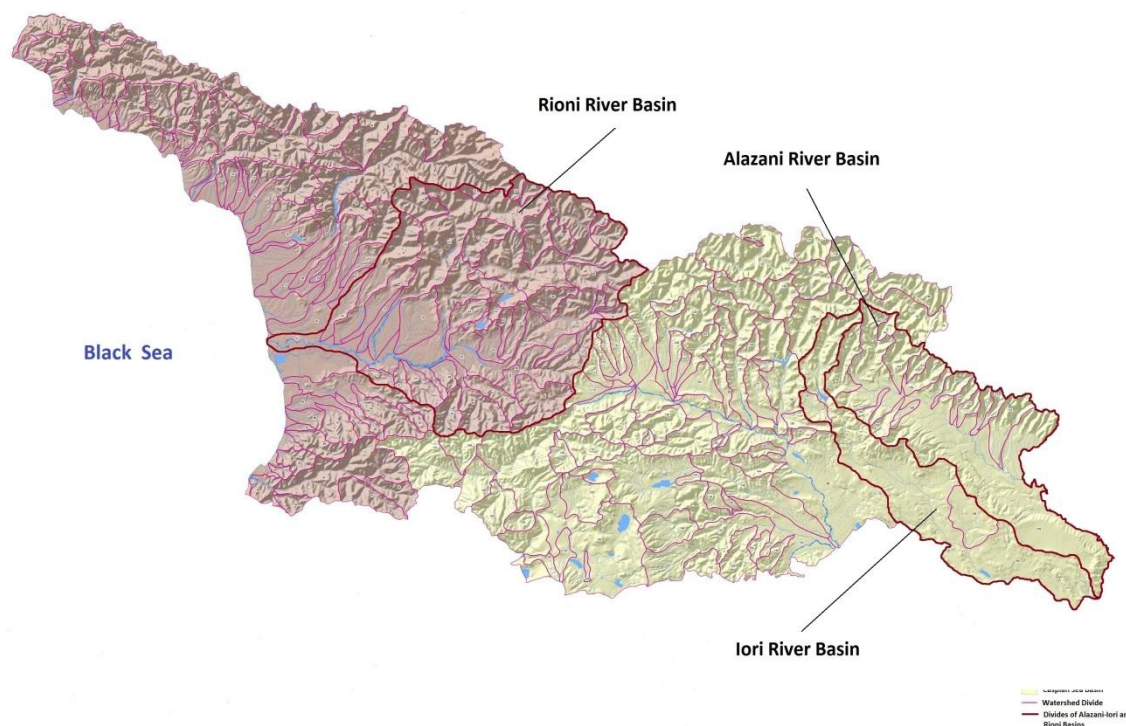


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Integrated Natural Resources Management in Watersheds (INRMW) of Georgia Program

# Technical Report 1. Rapid National Assessment February 2011



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## LIST OF ACRONYMS AND ABBREVIATIONS

1. AA – Amelioration Association
2. ACCOBAMS – Agreement on Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Atlantic Area
3. AEWA – Agreement of the Bonn Convention on African-Eurasian Migratory Waterbird
4. ADB – Asian Development Bank
5. AFD – Agence Francaise de Developpement (French Development Agency)
6. APA – Agency for Protected Areas
7. ARET – Agriculture, Research, Extension and Training Program
8. BAT- Best Available Technology
9. BDD – Basic Data and Directions
10. bln - billion
11. BMZ - German Federal Ministry for Economic Cooperation and Development
12. BMU – German Ministry of Environment and Nuclear Safety
13. BP – British Petroleum
14. BTC Co – Baku-Ceyhan-Tbilisi Company
15. BSAP – Biodiversity Strategy and Action Plan
16. °C – Temperature degree by Celsius scale
17. CC-Climate Change
18. CDM – Clean Development Mechanism
19. Geostat – Georgian Statistical Service
20. CENN – Caucasus Environmental NGO Network
21. CEPF – Critical Ecosystems Partnership Fund
22. CFC-12 – Chlorofluorocarbons-12
23. CHM – Clearing House Mechanism
24. CITES - Convention on International Trade with Endangered flora and fauna
25. CNF – Caucasus Nature Fund
26. CPAF – Caucasus Protected Areas Trust Fund (current CNF)
27. CSO – Commercial Operator of Electricity Systems (same as Commercial system operator)
28. CSR – Corporate Social Responsibility
29. DNA – Designated National Authority
30. DIPECHO – Disaster Preparedness Program under the European Commission Humanitarian Aid
31. DRR – Disaster Risk Reduction
32. EBRD – European Bank for Reconstruction and Development
33. EC – European Community
34. ECP – Ecoregion Conservation Plan
35. EEC – European Economic Community
36. EECCA – Eastern Europe, Caucasus and Central Asia
37. EIA – Environmental Impact Assessment
38. ELKANA – Biological Farming Association
39. EMD – Emergency Management Department
40. ENP – European Neighborhood Policy
41. ENVSEC – Environmental Security Initiative, OSCE-NATO-UNEP- UNDP Initiative
42. EU – European Union

43. EUROBATS - Agreement on the Conservation of Bats in Europe
44. FAO – Food and Agriculture Organization
45. FDI – Foreign Direct Investment
46. FFI – Flora and Fauna International
47. FP7 – Seventh Framework Program of EU Council
48. GEF – Global Environment Facility
49. GEL – Georgian Lari
50. GEO - Georgia
51. GHG – Green House Gas
52. GIOC – Georgian International Oil Corporation
53. GIS – Geographic Information Systems
54. GNERC – Georgina National Energy Regulatory Commission
55. GNEWRC – Georgian National Energy and Water Regulatory Commission
56. GoG – Government of Georgia
57. GOGC – Georgian Oil and Gas Company
58. GTC – Gas Transportation Company
59. GTZ- German Technical Cooperation
60. GWEM – Georgian Wholesale Electricity Market
61. GW/h – Gigawatt per hour
62. GWP – Georgian Water and Power
63. ha – hectare
64. HCFC – Hydro-chlorofluorocarbons
65. HPMP – HCFCs Phase-out Management Plan
66. HPP – Hydropower plant
67. IBA – Important Bird Area
68. ICZM – Integrated Coastal Zone Management
69. IDA – International Development Aid
70. IFAD – International Fund for Agricultural Development
71. IFC – International Financial Corporation
72. INPI FLEG – Improving Forest Law Enforcement and Governance in the European Neighborhood Policy East Countries and Russia
73. INRM – Integrated Natural Resources Management
74. INRMW – Integrated Natural Resources Management in Watersheds
75. IPA – Important Plant Areas
76. ISO – International Standardization Organization
77. ISO 9000 – Family of standards related to quality management systems
78. ISO 14000 – Environmental Management Standards
79. ITAP – International Technical Assistance Program (USDoI program)
80. ITC – International Institute of Geo information Science and Earth Observation ITC (Netherlands)
81. IUCN – International Union for Nature conservation
82. IWRMP – Integrated Water Resources Management and Planning
83. JICA - Japanese International Cooperation Agency
84. KFW – German Development Bank
85. Km – kilometers
86. kV- kilovolt

87. kW/h – kilowatt per hour
88. LEDS – Low Emission Development Strategy
89. LLC – Limited Liability Company
90. l/s – Liter per second
91. Ltd – Limited liability
92. M – million
93. MAAP – Georgia Market Alliances against Poverty
94. MATRA – Dutch Government program Social Transformation
95. m<sup>3</sup> – cubic meter
96. MCG – Millennium Challenge Georgia
97. MDF – Municipal Development Fund
98. MEPNR – Ministry of Environmental Protection and Natural Resources
99. mg/l – milligram per liter
100. ml - milliliter
101. mln – million
102. MoU – Memorandum of Understanding
103. MRDI – Ministry of Regional Development and Infrastructure
104. MTEF – Mid-term Expenditure Framework
105. MW – Megawatt
106. NACRES – (NOAH ARC) Centre for Biodiversity Conservation
107. NAP – National Action Program to combat Desertification
108. NATELI– New Applied Technology efficiency and Lighting Initiative
109. NATO – North Atlantic Treaty Organization
110. NEA – National Environmental Agency
111. NEAP – National Environmental Action Plan
112. NGOs – Non-governmental Organizations
113. NIP – National Implementation Plan for PoPs Management
114. ODA – Official Development Assistance O/M – Operations or Maintenance
115. OSCE – Organization for Security and Co-operation in Europe
116. PAS – Protected Areas System
117. PAs – Protected Areas
118. PGI – USAID Power, Gas and Infrastructure Program
119. PoPs – Persistent Organic Pollutants
120. REC – Regional Environmental Center
121. SAICM – Strategic Approach to International Chemicals Management
122. SCC – State Consultative Commission
123. SCP Co – South Caucasus Pipeline Company
124. SDAP – Sustainable Development and Policy Center
125. SDC – Swiss Agency for Development and Cooperation
126. SHPP – Small hydropower plant
127. SIDA – Swedish International Development Agency
128. SFF – State Forest Fund
129. TACIS – Technical Aid to the Commonwealth of Independent States
130. TBC Bank – One of the Leading Financial Institutions in Georgia
131. TPMP – Terminal Phase-out Management Plan for CFCs
132. UN – United Nations

- 133. UNCBD – United National Convention on Biodiversity
- 134. UNCCD – UN Convention to Combat Desertification
- 135. UNDP – United National Development Programme
- 136. UNECE – United Nations Economic Commission for Europe
- 137. UNEP – United Nations Environmental Programme
- 138. UNFCCC – United Nations Framework Convention on Climate Change
- 139. UNICEF – United Nations Children’s Fund
- 140. UNITAR – United Nations Institute for Training and Research
- 141. USA - Untied States of America
- 142. USAID – United States Agency for International Development
- 143. USD – US Dollar
- 144. USDol – US Department of Interior
- 145. US \$ - US Dollar
- 146. USEPA – United States Environmental Protection Agency
- 147. VTB Bank – Former Vneshtorgbank, is one of the leading universal banks of Russia
- 148. WB – World Bank
- 149. WFD – Water Framework Directive
- 150. WHO – World Health Organization
- 151. WI – Winrock International
- 152. WTP – Wastewater Treatment Plant
- 153. WWF – World Wildlife Fund
- 154. € - EURO

## SUMMARY

Georgia is a country rich in natural resources with many unique and pristine ecosystems, but due to the absence of clear environmental legislation, poor law enforcement, low public awareness and widespread unsustainable environmental practices, the condition of the country's environment has suffered seriously. Combined effects of environmental degradation, in a synergy with adverse impacts of natural disasters and climate change, undermine the natural resource base and ecosystem services that Georgia depends upon for sustainable development.

In order to address the above issues, in October 2010 USAID-Caucasus launched a multi-year project: "Integrated Natural Resources Management in Watersheds of Georgia" (hereafter INRMW). The primary goal of the INRMW Program is to improve current and future lives of people in Georgia by utilizing and managing natural resources more sustainably, including the water, soil, vegetation, and ecosystems that encompass them. The project aims to introduce innovative approaches and practical models of participatory integrated natural resources management in targeted watersheds, by facilitating reforms to and harmonization of national policies, and by increasing the capacity of national and regional institutions to replicate these approaches and models throughout the country. These models will be introduced in four representative watersheds of the Rioni and Alazani-Iori River Basins and efforts will be made to upscale and disseminate them across the country.

The objective of the Rapid National Assessment is to analyze the current legal, policy and institutional setting and existing practices for natural resources management at the national level and to suggest improvements towards managing Georgia's natural resource base more sustainably and in an integrated way within natural boundaries of landscapes/watersheds. The focus is on sectors for water, land, biological and mineral resources management as well as on sectors having adverse impacts on ecosystems, including agriculture, energy, and water supply. The existing enabling environment and current practices for waste management, natural disasters and climate change, significantly affecting the country's resource base, are also considered.

The study concludes that the current legal, policy and institutional frameworks do not support integrated natural resources planning and management within boundaries of river basins/watersheds. There are few provisions in environmental laws that require simultaneous management of natural resources. Most of these provisions are contained in the existing and draft laws on water. However, even in these laws the focus is on water resources with little or no consideration of other resources. Furthermore, these provisions are very general and need further elaboration.

The Law on Environmental Impact Permitting, which applies an integrated approach for protection of various environmental areas, has a number of drawbacks including not regulating many activities with potential significant adverse environmental impacts. Law enforcement provisions are also weak, not authorizing environmental inspectors to conduct regular monitoring and control of permit holder facilities. Moreover, inspectors are not mandated to enter facilities not subject to environmental permitting. And most important, the state can waive the need for an environmental impact assessment if the particular activity is considered of high state importance.

Interagency cooperation is very weak and mostly happens during the development of various laws and sub-laws as well as during the permitting process. Moreover, in the light of on-going reorganization processes of the Ministry of Environmental Protection and Natural Resources of Georgia, the delegation



of various environmental management functions to a number of Ministries might further disintegrate the cooperation of line Ministries.

With regard to management of the sectors having significant impacts on the environment and natural resources, including agriculture, potable water, energy and disaster management, unsustainable practices dominate which do not promote resource use efficiency, pollution prevention, and risk minimization practices through the application of precautionary principles.

Stemming from findings of the gap analysis, the study provides general recommendations to decision-makers in relation to the improvement of legal-regulatory, policy and institutional frameworks and, current practices for natural resources management with a view of application of integrated natural resources and watershed management principles. Based on these recommendations and the outcomes of wide consultations with government authorities that will be conducted under the INRMW program from June through July 2011, the program team will identify priority technical assistance and advisory interventions relevant to the INRMW program, and will design a program of assistance to the government of Georgia. Technical assistance will be provided to the relevant authorities throughout the entire program period. The support area might include, but not be limited to integrated natural resource and river basin management, agriculture water use efficiency, water safety, energy efficiency and renewable energies, disaster risk reduction and climate change. Special attention will be paid to the area of climate change and Georgia's increased participation in the Clean Development Mechanism of the Kyoto Protocol.

## **1.0 INTRODUCTION**

### **1.1 Background**

Georgia is a country rich in natural resources with many picturesque and pristine ecosystems, but in the presence of unclear environmental legislation and the weak law enforcement the condition of the country's environment has suffered for many years. Many surface and ground waters are severely polluted due to waste dumping and untreated wastewater discharges, large areas of forests are cleared due to illegal logging that was very intensive after the break-up of the Soviet Union, populations of a number of valuable and unique fish and wildlife species are reduced due to poaching, and many grasslands are overgrazed. Inappropriate irrigation and agricultural practices have degraded large areas of arable land through soil erosion and salinization. The combined effects of these widespread practices in a synergy with adverse impacts of natural disasters and climate change undermine the natural resource base and ecosystem services that Georgia depends upon for sustainable development.

In order to address above issues, in October 2010 USAID-Caucasus launched a multi-year project: "Integrated Environmental Management in Watersheds of Georgia" (hereafter INRMW). The primary goal of the INRMW Program is to improve current and future lives of people in Georgia by utilizing and managing natural resources more sustainably, including water, soil, vegetation, and the ecosystems that encompass them. The project aims to introduce innovative approaches and practical models of participatory integrated natural resources management in targeted watersheds, by facilitating reforms to and harmonization of national policies, and by increasing the capacity of national and regional institutions to replicate these approaches and models throughout the country. These models will be introduced in four representative watersheds of Rioni and Alazani-Iori River Basins and efforts will be made to upscale and disseminate them across the country.

### **1.2 Objectives and Scope**

The Objective of the Rapid National Assessment is to analyze current legal, policy and institutional setting and existing practices for natural resources management at the national level and suggest improvements towards managing Georgia's natural base more sustainably and in an integrated way within natural boundaries of landscapes and/watersheds.

The focus is on sectors for water, land, biological and mineral resources management as well as on sectors having adverse impacts on ecosystems, including agriculture, energy and water supply. The existing enabling environment and current practices for management of wastes, natural disasters and climate change, significantly affecting the country's resource base are also considered. The assessment analyzes the Georgian situation, the gaps and the areas of conflicts among sectors in the context of integrated natural resources management. The results of the analysis will be used to design and implement a technical assistance and policy advice program for the government of Georgia.

### **1.3 Methodology**

The study has been developed through collection, compilation and analysis of available information as well as through arranging face to face interviews with various stakeholders. More specially, the study team has relied on available assessments of Georgia's environmental situation, including Environmental Performance Review, State of the Environment of Georgia and a number of sector assessments. In

addition, meetings with representatives of line Ministries, environmental NGOs and experts have been arranged to solicit their opinions.

Opinions expressed in this report are those of individual experts and may not coincide with the official positions of the government of Georgia and USAID Caucasus.

## **2.0 EXITING LEGAL-REGULATORY, POLICY & INSTITUTIONAL FRAMEWORK ON ENVIRONMENTAL AND NATURAL RESOURCES MANAGEMENT**

### **2.1 Framework Environmental Legislation**

The Constitution of Georgia defines general rights and obligations of Georgian citizens and the state towards protecting the country's environment. Specifically, Article 37, clause 3 states: "Everyone has a right to live in a healthy environment and enjoy the natural and cultural environment. Everyone is obliged to protect the natural and cultural environment". Furthermore, the same article obliges the state to ensure the protection of environment and rational use of natural resources (paragraphs 3 ,4) and guarantees everyone's right to have an access to complete, objective and timely information on working and living conditions (paragraph 5).

The Law on Environmental Protection (1996) is a framework statutory act setting general principles and rules for environmental protection and natural resources management in Georgia. These basic principles include "polluter pays", "user pays", "risk minimization", "sustainability" and other principles. Furthermore, the Law defines framework rules for a wide array of environmental issues, e.g. setting ambient environment quality and emission standards, licensing use of natural resources and emissions to the ambient environment, environmental permitting, conducting state inventories of natural resource uses and emissions, creating state natural resource and pollutant registries, setting-up and operating environmental monitoring and reporting systems, public participation in decision-making, application of economic instruments, environmental awareness and education, etc. These general rules are further elaborated and detailed in environmental media-specific laws and regulations.

The Law of Georgia on Licenses and Permissions (2005) lists types of licenses and permissions as well as activities subject to licensing. According to it, licenses are to be issued for using mineral resources, oil and gas exploration and extraction, commercial forest cutting and timber production, arrangement of hunting farms, commercial fishing, production of fir cones and, use of snowdrop bulbs and/or cyclamen tubes, regulated under CITES. These licenses are sold by auction. There are no other natural resource licenses in Georgia.

In 2007 and 2008 a number of amendments were made to the framework environmental law. These changes referred to environmental licensing and permitting and to environmental impact assessments stipulated from new laws on Licenses and Permits (2005) and on Environmental Impact Permit (2008). More specifically, renewable environmental discharge/emission licenses on individual environmental media have been abolished together with the obligation of a permit-seeker to conduct environmental impact assessments at his/her expense. Currently, only new activities/major modifications, listed in the Law on Environmental Impact Permit (2008) are subject to environmental impact assessments, state ecological expertise and integrated environmental permitting. More specifically, the following activities fall under the categories requiring environmental impact permits: processing of mineral resources, except for processing of inert materials, any industrial processes using asbestos, production of construction materials, glass production, processing of solid municipal wastes and arrangement of landfills; toxic waste disposal, storage and processing/elimination; gasification, coal liquefaction and production of briquettes; construction of main oil and gas pipelines; construction of gas and oil terminals with a capacity of more than 1,000 cubic meters each or in total, construction of highways and bridges; construction of high voltage transmission lines (more than 35 KV) and sub-stations (more than 110 KV); construction of hydropower plants (2 or more MW capacity) and thermo power plants

(10 or more MW capacity); construction of metro stations; construction of water reservoirs (10,000 and more cubic meters of volume); construction of wastewater treatment plants (1,000 and more cubic meters of capacity) and trunk channels of sewerage systems; construction of airport runways, railway stations and ports; construction of dams, harbors; chemical production (chemical processing of semi-fabricates/byproducts and production of chemical substances; production and processing of pesticides, mineral fertilizers, solvents, dyes, plastics; production of explosives, batteries, graphite electrodes); petroleum and gas industries (500 and more tons of capacity); construction and operations of Ferro-alloy plants; arrangement of storage facilities for toxic and other hazardous chemicals. For other activities not listed in the law, technical requirements are set based on the Minister of Environment's order. The permit is issued on a permanent basis and it is allowed to transfer its ownership to another person. Many activities subject to environmental impact permitting are also subject to construction permitting.

In addition to the above changes, new amendments to the Environmental Protection Law made reference to environmental labeling, ambient environmental quality and emission standards and, environmental reporting. More specifically, by 2008 the following changes had been made: state of the environmental reporting became mandatory every three years instead of every year; environmental labeling of ecologically clean products is carried out by the interagency commission under the Ministry of Environment composed of representative of the Ministries of Environmental Protection and Natural Resources, Labor, Health and Social Protection and Agriculture as well as representatives of civil society organizations and other interested government agencies; ambient environmental quality standards are set every five years by the Ministry of Health with consent of the Ministry of Environment; norms/quotas for the use of agro-chemicals and rules for their transportation and storage are defined every five years by the Ministry of Environmental Protection and Natural Resources with consent of the Ministry of Labor, Health and Social Protection; limits for environmental loads that include quotas on the use of natural resources at state, regional and local level are defined by the Ministry of Environmental protection and natural resources every five year. Changes in the law abolished source-specific emission limits.

Since 2009, the Ministry of Environment Protection and Natural Resources has been working on development of a unified Environmental Code with objectives to create a basis for sustainable environmental and natural resources management, eliminate conflicts among various environmental laws and sub-laws, and enhance participatory decision-making. This code will supersede the Framework Environmental Law, existing environmental media-specific laws, sub-laws and regulations. The new code will be effective as of 2015.

## **2.2 Environmental Media-specific Laws Regulating Natural Resources, Wastes and Climate Change**

### ***2.2.1 Water Resources***

#### *General Objectives and Provisions*

General principles and rules outlined in the "Law on Environmental Protection" refer to all natural resources including water resources. The "Law on Water" (16 October 1997) further elaborates water management rules and principles. Its main objectives are as follows:

- Ensure implementation of unified state policy in the field of water protection and use;

- Protect and conserve water objects, including waters of the Black Sea with consideration of sustainable development principles;
- Satisfy primarily needs of population for clean drinking water;
- Ensure sustainability and sustainable use of aquatic fauna;
- Prevent water negative impacts and ensure their effective elimination;
- Guarantee defense of the state interests of Georgia in the spheres of water protection, use and international water trade;
- Produce commercial water products according to international principles and standards;
- Defend the legal rights and interests of physical and legal entities (persons) in the spheres of water protection and use

According to the Water Law all waters existing in Georgia belong to the state and can only be issued to individuals or legal entities for essential (beneficial) uses. Any action directly or indirectly infringing the right of the state property on water is prohibited (Article 6). The ownership of the land where the water object is located does not guarantee the land owner's right to use this water object.

The 1996 Law of Georgia on Mineral Resources contains the main principles of protection and regulation of ground waters. According to this law, similar to surface waters, ground waters are state property and belong to the state fund. They together with other mineral resources are divided into two categories of national and local importance and can only be used for following purposes :1) research; 2) extraction and processing; 3) gathering of geological, mineralogical, paleontological collection and exhibits for museums. Mineral deposits are given for the use only on the basis of the relevant permission (license) except the concrete cases indicated in the law.

The judicial relationships associated with the use of wildlife, plant formations, forests, land and other natural resources in the process of water use are regulated by the appropriate legislation (the law on wildlife, the law on the system of protected territories, the law on soil protection, the law on protection of plantations against hazardous organisms, the law on tourism and resorts, the law on ownership of agricultural land, the law on pesticides and agrochemicals, the forest code of Georgia and others).

#### *Classification of Georgian Waters*

Water resources of Georgia based on their location, type of their formation and peculiarities of their use are divided into surface and ground waters. Waters of all water bodies of Georgia, including ground waters form a state water fund. The land occupied by the water bodies (except for the groundwater), along with the hydraulic and other water management facilities, also the land designated as a water protection zone, sanitary protection zone, etc. are considered the land of the state water fund. The land of the state water fund can be used for development and operations of facilities necessary for meeting the needs of using the water for drinking, bathing, recreation and medical purposes as well as for agricultural, industrial, fisheries, energy, transportation and other purposes. The Georgian legislation sets special rules for the use of the land of the state water fund.

According to their hydrographic characteristics and geographic location, unique scientific and esthetic, also economical and environmental importance the water bodies are classified in the following groups:

- Of state priority importance;
- Of state importance;
- Of local importance

The Georgian legislation sets different water use regimes for various water categories (The Water Law of Georgia, Article 9). More specifically, according to the Water Law, water bodies of state priority importance can be used only for scientific research, water protection, defense of state borders, firefighting, and disaster prevention and mitigation. Some economic activities related to the use of water and other natural resources are prohibited in water bodies of state priority importance.

The list of surface water bodies of state priority importance and state importance is approved by the order of the Minister of Environment and Natural Resources (Order of the Minister of Environment and Natural Resources of Georgia #61 of 07.05.1998 on approving the list of surface water bodies of state priority importance and state importance).

#### *Permits and Licenses for Water Uses*

The Water Law lists different water uses that include: water abstraction, diversion, creation of artificial lakes, change of water level or direction of the flow, wastewater discharges, dredging, building and operations of hydro-engineering facilities having impact on water quality and quantity, groundwater surveys. In general there are two types of water uses: general water use and special water use. Water use for non-commercial, personal (drinking and bathing), aesthetic, recreational or sanitary-medical purposes without making use of special equipment or devices that have an impact on the characteristics of the water is considered as General Water Use. Groundwater use for above purposes with application of wells, filtrates, or simple drainage systems for springs that do not cause a decrease in water level is considered the general water use. Such uses should be registered by local authorities. Before the changes in the permitting systems, only general water use was free of charge, while the special water uses were charged against water extractions and effluent discharges. Currently, both types of water uses are free of charge.

Water uses with application of such facilities or technical devices that have an impact on water condition are considered as special water uses. In rare cases, water uses without application of special devices may be treated as special water uses if they have the impact on water conditions. Special water uses serve following purposes: drinking and bathing, recreation, research, industrial, agriculture, hydropower and other hydro-technical purposes, fisheries, hunting, navigation, wastewater discharge, rafting of logs, dredging, construction of various communications, pipelines and other facilities, burying of sea bed sediments, water extraction or diversion, creation of reservoirs, change in water level or flow direction.

Initially, the Water Law (1997) required water use permitting and licensing for special water uses. The licensees were charged against discharges of effluents into water bodies and water abstractions. However, the water use permits system was abolished in 2007 (with effect in January, 2008) within the framework of streamlining national legislation in order to create, as argued, a favorable legal ground for economic development. Instead, environmental impact permit was introduced by a new law on

Environmental Impact Permits in 2007, which replaced the Law on Environmental Permits (1996). The new law does not require a separate permit for water use. It integrates issues related to surface water abstraction and wastewater discharges in one environmental impact permit. Environmental impact permits are required for new developments and already operating industries which started their activities up to 1996 (before the Law on Environmental Permit came into force). Economic activities, not listed in the law on Environmental Impact Permit, are regulated by the Environmental Technical regulation issued in 2008 by the order #745 of the Ministry of Environment Protection and natural Resources. Environmental impact permits are issued by the MEPNR. The permits are of unlimited (permanent) duration. The Ministry of Economic Development is currently responsible for the issuance of groundwater abstraction licenses the validity of which is 25 years.

### *Water Protection*

According to the Water Law (Article 14), water protection measures are planned according to the priorities of national environmental action plan, regional and local plans and are financed by state, regional and municipal budgets. Water protection measures should be integrated in national, regional and local socio-economic development plans, local land use plans, urban development plans, infrastructure development plans, sector development plans, protected areas management plans, forest management plans and other environmental plans and programs. During the planning and implementation of water protection measures following requirements should be taken into consideration: water objects should be protected against pollution, contamination, reduction and elimination in order to avoid harmful effects on human health and ecology; water objects used for drinking or bathing purposes should meet corresponding surface water quality standards (see annex 1); water objects with high aesthetic, recreational or scientific importance should be protected against harmful impacts; special regime of protection in sanitary zones of drinking and bathing water intake facilities should be strongly followed; activities related to water use should be subject to environmental impact assessment and planning and implementation of mitigation measures; aquatic fauna should be protected; river banks and coastal zones should be maintained and protected; water objects of high ecological importance should be designated as protected areas.

Water protection measures within the protected areas are planned in accordance with Water Law and the Law on Protected Areas

Water Protection Zones. Riparian areas of rivers, lakes, reservoirs as well as roadways of major irrigation and other channels are considered as water protection zones. Such activities as construction, dredging, rafting of logs, logging, drilling, explosions, mining, building of communications and other activities in water protection zones are subject to environmental impact permitting and other permitting required by the Georgian legislation, except for those specified by the Water law. The rules for setting-up of the borders of water protection zones, the list of activities allowed within these zones and the special conditions for activities are defined by the provision/regulation on “Water Protection Zones” elaborated by the Ministry of Environment in a consent with the Department of State Sanitary Supervision (this institution has been abolished) under the Ministry of Health and Social Protection.

Riparian areas of rivers where special protection regime is set-up are considered as river protection zones. River banks, ravines adjacent to rivers, old beds of rivers may be considered as river protection zones. The width of the river protection zone is calculated from both edges of river beds, in meters: 1) for 25km long rivers – 10 meters; 2) for 50km long rivers -20 meters; 3) for 75 km long rivers – 30 meters and 4) for rivers with more than 75km length – 50 meters. Any construction or major modifications of



industrial facilities, dumping, disposal or storage of municipal, agricultural and industrial wastes and, use of pesticides and other toxic chemicals is prohibited in water protection zones. Any hydraulic facility located in the water protection zones should be equipped with special pollution control/prevention devices.

The lands related to water protection zones can be transferred to physical or legal entities under their ownership or under a lease, provided water protection regimes set out in the Water Law are followed up. Land uses in water protection zones are controlled by the Ministry of Environmental Protection and Natural Resources and relevant local authorities within their own competencies.

Forests in Water Protection Zones should only be used for maintaining natural conditions of water bodies. Any logging is prohibited in such zones. Only those forest management activities are allowed in water protection zones, which provide protection against water contamination and exhaustion. Rules for forest uses in water protection zones are defined by legal acts governing forest management. Namely, the Forest Code defines that one of the usable State Forest Fund categories is the forest with water regulation function. According to the Forest Code, no special protection standards apply in these forests. However, according to the Decree #6 of the President of Georgia “On the approval of Regulations on the Rules of final Cuts in Georgian forests and Number of Measures for Protection, restoration –renovation of forests “final cuts shall not be performed in the most protected area categories, in resorts zone and green zone categories of the Usable State Forest Fund (SFF) as well as in certain listed areas within soil and water regulation forests. Compliance assurance monitoring and control over forest use in water protection zones is implemented by the Ministry of Environment and relevant local authorities within their own competencies.

Unique water objects can be designated as protected areas, according to the law on Protected Areas and relevant international agreements. For the purpose of creation of the network of protected areas of water objects state reserve funds is created by the Ministry of Environment.

Sanitary Protection Zones. The Water Law sets water sanitary zones for protection of water bodies used for drinking, bathing, recreation and spa purposes. All surface or ground waters that are sources of drinking or bathing water for existing or new water supply systems should have sanitary protection zones. Rules and methodology for designation of sanitary zones and the list for allowed activities there are defined by Order of the Minister of Labor, Health and Social Security #297 of 16.08.2001 on the “Approval of Water Quality Standards for the Status of the Environment”. Sanitary zones of tap water sources are divided into three categories, where different regimes of protection are applied. The first is the strict protection zone covering the water intake and other hydro- technical facilities and their nearest surroundings, if necessary. This zone has to be unpopulated with only operators of the systems having the access to the site. Any activity except for that necessary for construction, operations and maintenance of the water supply system is prohibited in the strict protection zone. The zone should be fenced, with warning signs put there and guards provided to the site. Local authorities should inform population on the boundaries and special protection regimes of the sanitary zones. In addition, creation of different regime zones is foreseen (The Law on sanitary protection zones of resorts and resort areas effective as of 20.03.1998 and the Law on regulation and engineering protection of coastal zones of the seas and rivers of Georgia effective as of 05.12.2003).

Pollution Control. Allowable concentrations of hazardous substances in wastewaters are determined in accordance with the methodology developed by the Ministry of Environment and Natural Resources

(Order of the Minister of Environment and Natural Resources of Georgia #105 of 12.08.1996 on the approval of the methods of calculating the standards of permissible pollutant limits in the water discharge flowing into the water bodies). In case of water users who are subject to environmental permitting the limits of permissible pollutant levels are calculated. The calculation is made by the water user himself, this document is discussed at the Division of Water Management and approved by the Head of the Department of Integrated Management of Environment at the Ministry of Environment Protection and Natural Resources. The main criteria in calculating the limits of permissible pollutant levels is the requirement demanding that the quality of water in a water body after the discharge meet the recognized state standards. Those standards, according by the categories are defined by the order #130 (1996) of the Minister of Environmental Protection and Natural Resources on “The Rules of Protection of Surface Waters Against Pollution”. The quality of water in a water body should also correspond to the sanitary-hygienic norms approved by the Ministry of Labor, Health and Social Security (Order of the Minister of Labor, Health and Social Security #297 of 16.08.2001 on the Approval of Water Quality Standards for the Status of the Environment). The document contains the sanitary norms and regulations established for different types of water use, such as: water used for drinking purposes through a centralized water supply system; water used for drinking purposes when the centralized water supply system does not exist, springs; surface waters; coastal zone waters.

Even though the framework Law on Environmental Protection of Georgia (Article 4, Article 24) recognizes the need of applying/ the Best Available Technologies (BAT) in industrial and wastewater treatment processes, the concept is rarely implemented or enforced in practice. There is no special regulation or more detailed provisions related to BAT application in national legislation of Georgia.

For economic activities not included in the list of activities subject to environmental impact, specific technical requirements (so-called rules) have been established. Technical rules for industrial and non-industrial effluent discharges into surface waters are established by the Order N 745 on Environmental Technical Rules of the Minister of Environment from 13 November 2008. This regulation contains a list of parameters and respective emission limit values, which polluters should observe. This approach does not give due regard to the type or size of enterprises, technologies used or the state of receiving waters. Moreover, no system is in place for the classification of water bodies according to pollution levels.

Under the EU-funded project Water Governance in the Western EECCA Countries, efforts have been made to shift to a system of surface water quality standards in Georgia, which, although based on the principles enshrined in the EU WFD, take into account the situation on the ground<sup>1</sup>, but without any success.

#### *State System for Water and Water Use Inventories/Accounting, State Cadastres and Balances*

State System for Accounting of Water Objects and Water Uses. According to the Water Law, the objective for the state system of water and water use accounting is to create a knowledge base on Georgian water bodies, their quality and quantity and their usage as well as to ensure scientifically justified water allocation among various water users with a priority given to the water use for drinking and bathing purposes, and to the protection of water bodies. State accounting of water resources is conducted via application of special water use registration forms approved by the Statistics Department (current Geostat). The forms are filled out on the basis of initial statistical accounts that should be kept by all special water users. The water-use initial reporting forms and their maintenance procedures are

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<sup>1</sup>Water Governance in the Western EECCA Countries. TACIS/2008/137-153 (EC).

approved by the Ministry of Environment Protection and Natural Resources under the Order “On the Approval of Water-Use Initial Reporting Forms and their Maintenance Procedure”. Special water users are liable to furnish any water use-related information free of charge to the Ministry of Environment in accordance with the instruction worked out by the Ministry of Environment Protection and Natural Resources in coordination with the Statistics Department (current Geostat). This information should be entered into the unified environmental information system so-called Ministry’s Common Information Natural Resources Fund established within the Ministry of Environment.

Any use of ground waters, including geological survey, construction and O/M of underground facilities, etc, is subject to state accounting of water use and registration according to the law on “Mineral Resources”.

Water Cadastre. In accordance with the Law on Water, State Water Cadastre consists of data on water quantity and quality, water users and water uses. Rules for Water inventory and cadastre are defined by the Ministry of Environment through issuance of specific regulation. The State Water Cadastre should be funded from the state budget.

Water Balances (budgets). According to the Water Law Surface Water Balances should be created for individual river basins and territorial-administrative units and should include assessments of water quality and quantity, available water resources, water supply and demand, structure of water uses.

Creation and update of Ground Water Balances as well as assessment and approval of water reserves are regulated by the law on “Mineral Resources”.

#### *Multi-purpose Water Use and Protection Plans*

Water use and protection schemes/plans are to be created at national, river basin and administrative unit levels. These plans should meet the needs for drinking and bathing water supply, should regulate the water flow, and ensure efficient water use and effective water treatment or water pollution prevention. These integrated plans should be developed by scientific-research institutions through cooperation of various line Ministries and agencies and should be approved by the Ministry of Environmental Protection and Natural Resources. Rules for Development of multi-purpose plans should be elaborated and approved jointly by the Ministries of Environment and Economic Development.

#### *State Water Monitoring System*

The Law on Water obliges the state to establish and maintain the unified system of water monitoring and information analysis. Its objectives are to collect and analyze data on water quality and quantity, assess energy potential of water resources, forecast and analysis of natural disasters risks. Water monitoring is an integral part of state environmental monitoring system and is implemented by the Ministry of Environmental Protection and Natural Resources.

#### *Law Enforcement and Liabilities for Violation of Water Law*

Law Enforcement. Compliance assurance monitoring and control of water uses and protection is conducted by the Ministry of Environmental Protection and Natural Resources.

Liabilities. For violation of the water law and related regulations physical or legal persons may bear criminal or administrative charges according to the relevant Georgian legislation. Water users polluting

the water bodies should compensate the damage the amount of which is defined by separate regulations adopted by the Ministry of Environment.

#### *New Draft Water Law*

At present, Georgia is in the process of elaboration of a new water law. The first draft has already been developed. It regulates principles, methods and rules of use and protection of in-land and territorial waters of Georgia. The law introduces principles of integrated water resources and river basin management and incorporates legal requirements of the EU Water Framework Directive and other related daughter directives.

Similar to the existing Water Law, the draft law classifies Georgian waters into three categories, based on their importance: 1) waters of special state importance; 2) waters of state importance; 3) waters of local importance. The waters of special state importance are under the ownership of the national government, while the waters of local importance are to be under the ownership of local self-governing bodies.

Similar to the existing law, the draft law divides water uses into General and Special Water Use categories. Only the latter is subject to environmental permitting. All water uses considered as General Water Use in the draft law fall under the same category as it is in the existing law. The only difference between the draft and the active laws in this regard is that the draft law specifies a maximum limit of water intake from ground waters (0.05 l/s) that classifies the water use as General Water Use.

The draft law gives the highest priority to water use for drinking and bathing purposes when allocating the water resources.

Water abstraction and discharge permits according to the draft law are the integral part of environmental permit. Special Water Users should conduct self-monitoring of their water uses, both abstractions and discharges, if such and should install water meters in intake areas. Owners or leasers of the lands allocated for special water use can use this water for general water use, provided the use does not deteriorate the water condition.

According to the draft law, water resources planning system consists of national and river basin planning. At the national level, the law envisages creation of state national commission for the purpose to develop a state water resources management program covering 15-year time horizon. At the river basin level, the national agency responsible for coordination of water resources management (presumably the Ministry of Environment) develops the river basin plans in consultation with the river basin advisory councils. River Basin Plans are based on integrated water resources management principles, covering both water quantity and quality considerations and are similar to those required by the EU directives. More specifically, they should include effluent discharge limits and minimum water quality requirements, classification of water objects in accordance with their ecological parameters, complex environmental quality objectives for different types of waters, water quality standards for water objects, water quantity requirements, etc. In addition, the programs for prevention or reduction of adverse effects of water (e.g. floods, mudflows, landslides, erosion, etc) should be an integral part of integrated river basin plans. For making effective river basin plans, the government should elaborate action plans, with relevant milestones and the budget. The methodology and the rules for river basin planning should be set in a special regulation to be developed by the coordinating agency and approved

by the government. Territorial units for river basin planning are to be defined by the coordinating agency and approved by the government.

### ***2.2.2 Biodiversity***

One of the major goals of the Law on Environmental Protection is to protect Georgia's biodiversity, rare, endemic and endangered species and marine environment as well as to maintain ecological balance. The law provides a general framework for species protection in Georgia. The law contains provisions on wild animals and plants that are threatened by extinction and those that are not.

Main statutory acts regulating the use and the protection of biological resources are the Laws of Georgia on Wildlife (1996), "On the Red List and the Red Book of Georgia" (2003) and on Protected Areas System (1996).

#### ***Red List and Red Book of Georgia***

The Red Book includes species defined by the Red Book of Georgia (1982). The Red List includes the species under Bonn Convention on the Conservation of Migratory Species of Wild Animals, and under the Agreements of the Bonn Convention on African-Eurasian Migratory Waterbird (AEWA) and on Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Atlantic Area (ACCOBAMS). These species populate Georgia permanently or temporarily. The Red List, approved in 2003, includes 26 species of mammals, 55 birds, 6 reptiles, 4 amphibians, 1 fish and 150 plant species.

According to Georgian legislation, any activity causing death of species on the Red List, decrease in the number of these species or destruction of their habitats is strictly prohibited. Harvesting of Red List species is permitted only for certain scientific purposes.

Work on the amendments to both the Wildlife Act and the Red List Act has been ongoing within the Department on Biodiversity of the ministry of Environment and Natural Resources for some years. Drafts of amendments to the Acts were finalized in February 2009. The Draft concerning the Wildlife Act tries a fundamentally new approach for this law. Its sole focus is now on non-endangered animals while all substantial provisions on endangered species have been deleted or replaced by references to the Red Lists Act. Of the uses of animals, the draft law primarily regulates hunting and fishing. The draft for amending Red List Act introduces a new provision modifying the status of the Commission for Red List Species and specifying a clearer procedure for the compilation and amendment of the red List as well as detailed provisions on the permission for the extraction from the natural environment of the Red List species of wild animals and plants or their parts.

#### ***Protected Areas***

PAS Classification. The Law of Georgia on Protected Areas (1996) provides a legal basis for development of a protected areas system in Georgia, which is a major instrument for biodiversity conservation. The use of natural resources is either limited or prohibited in Protected Areas (PAs) of Georgia, depending on protection regimes applied for each category of PAs. Classification of Georgia's PAs is based on IUCN recommendations. According to this classification, Georgian PAs are divided into 6 categories: 1) Strict Nature Reserve - Protected area managed mainly for science or wilderness protection (I); 2) National Park - Protected area managed mainly for ecosystem protection and recreation (II), 3) Natural Monument - Protected area managed mainly for conservation of specific natural features (III); 4)

Managed Nature Reserve - Protected area managed mainly for conservation through management intervention (restoration of ecosystems and sustainable use of renewable natural resources (IV); 5) Protected Landscape - Protected area managed mainly for landscape/seascape protection and recreation (V); 6) Multiple Use Area - Protected area managed mainly for the sustainable use of natural ecosystems.

The Law allows for setting up various protection zones in National Parks and Managed Natural Reserves. These zones are: Natural Strict Protection Zone organized for ecosystem preservation and non-intrusive research and education; Natural Managed Protection Zone organized for protection and restoration of vital environments, as well as for scientific research, tourism and educational activities; Visitors' Zone organized for protection of nature, recreation and educational activities; Restoration Zone organized for protection and restoration of natural objects degraded by human activities; Historical and Cultural Zone organized for protection and restoration of natural environment, historical and cultural objects and/or architectural monuments, as well as for recreation, tourism and educational activities; Administrative Zone organized for development of park management infrastructure; Traditional Use Zone organized for economic activities connected with the protection of nature and traditional use of renewable natural resources. These include limited haymaking, grazing, cutting of forests for firewood to meet population needs and maintain natural productivity. Farming and allocation of permanent farm buildings are forbidden.

In addition to above, the Law on Protected Areas allows for establishment of Protected Areas included in the international network of Protected Areas, such as the Biosphere Reserve, the World Heritage District and the Wetlands of International Importance.

Support (Buffer) Zones may be organized around Strict Nature Reserves, National Parks, Natural Monuments, Managed Nature Reserves and Protected Landscape according to their needs, but it is obligatory to establish such zones in Biosphere Reserves. Protection and economic activity restriction regime similar to the one of Multiple Use Area is applied for support zone. Activities allowed in the support zone are elaborated by special programs approved by the decree of the President of Georgia (27.04.2007). N4683).

PAs Ownership. Strict Nature Reserves, National Parks, Natural Monuments and Managed Nature Reserves are only of public property. It is forbidden to transfer these territories to physical and legal persons for use, except the Traditional Use Zone of National Park, in rare cases – the separate districts of Managed Nature Reserve. Nomad wild animals in the mentioned territories are also of public property. Natural monuments in specific cases can be transferred to physical or legal persons for ecotourism or recreation purposes according to the specific regulation effective of 2008. In protected landscapes and Multiple Use Areas, various forms of ownership are allowed.

Planning and Management of Protected Areas System. Planning of Protected Areas System includes planning of regions, natural and historical-cultural complexes and objects to be protected and development of recommendations on different categories of Protected Areas, borders, zones, prohibitions and allowed activities, together with the road map for establishing the Protected Areas.

Planning of Protected Areas System is being carried out by the Ministry of Environment Protection and Natural Resources of Georgia, Ministry of Economic Development of Georgia and the Protected Areas

Agency – the Legal Entity of Public Law of the Ministry of Environment Protection and Natural Resources of Georgia (hereinafter Agency for Protected Areas - APA) (18.12.2007. N5629 effective as of January 1, 2008).

Every Protected Area should have its Management Plan developed by the APA and should specify precise borders of the Protected Areas, their territorial organization, integral development programs and budgets for Support (Buffer) Zone and as well, should list protection, scientific research, monitoring, education, recreation, tourism, administration and other activities. Management Plans should be submitted to the Minister for approval by the time of establishment of the Protected Area or in rare cases within 3 years of the PA's establishment. PAs management plans should include estimations of cash flow necessary for PAs operations.

Cadastre of Protected Areas. The cadastre for Protected Areas consists of information on location, borders, status, regime of protection, natural resources of registered PAs. The PAs cadastre is maintained by the Ministry of the Environment.

PAs Management. APA manages Strict Nature Reserves, National Parks, Natural Monuments, Managed Nature Reserves, Biosphere Reserves, World Heritage Districts and Wetlands of International Importance; APA can co-manage with other entities separate zones of Managed Natural Reserves, Biosphere Reserves, World Heritage Districts and Natural Monuments. APA does not manage Multiple Use Areas but controls them

Liabilities. Legal Responsibilities for breaking the Georgian law on “Protected Areas System”. Administrative, civil and criminal liability are foreseen in case of breaking the requirements of this Law.

### *Wildlife*

The Wildlife Act regulates protection and regulation of the use of non-endangered species. Since the adoption of this law, only amateur and sport hunting are authorized in Georgia in special hunting farms. Outside the hunting farms, only hunting of migratory game birds is authorized. The normative acts define the rules of hunting, the list of species for hunting, hunting seasons, daily norms for hunting migratory birds, permitted or prohibited weapons for hunting. Long-term licenses are auctioned out for establishing hunting farms (20-25 years). The hunting farms are established based on the preliminary ecological, biological and economic study. The aim of this study is to ensure sustainable use of game species and the biodiversity of the hunting farms. The owner of a hunting farm is obliged to implement registration of animals on the territory of his/her farm and present annual results to the Ministry of Environmental Protection and Natural Resources. Based on these results, quotas will be defined for each hunted species.

Commercial fishing is authorized only based on special licenses, through auctioning. Prior to the auction, based on a special study, the limits of harvesting are defined per species and water reservoir. In 2005, for the purpose of sustainable use of fish resources, a State program was implemented. The program included the study of fish resources in eight lakes, artificial reservoirs and the Black Sea marine area. The list of authorized commercial fish species was defined, the seasons of fishing, fishing sites, permitted and prohibited nets and tools and the rules of reporting were defined.

Legislation defines responsibilities and fines for the violation of hunting and fishing laws. Removing certain non-timber forest products (bulbs of Galanthus and Cyclamen, cones of the Caucasian or Nordman fir (Abies Nordmanniana)) are subject to licensing in Georgia.

To avoid or mitigate the impacts on biodiversity caused by commercial activities such as industry, construction, agriculture etc, the following mechanisms are in place. Environmental Impact Permits are required for activities, which can have a significant impact on the environment. In order to obtain such a permit an environmental impact assessment (EIA) of the planned activities has to be undertaken. Based on these assessments the appropriate measures to avoid or mitigate the expected impact of the activity have to be developed.

Environmental Inspectorates of the Ministry of Environment are responsible for law enforcement. More specifically, it ensures compliance with conditions of environmental permits and licenses and the rules introduced for nature use. Furthermore, it investigates illegal activities that can affect the biodiversity.

People who illegally damage biodiversity are liable for any damage caused under the law and this cost is assessed and levied on the offender, in addition to any fines for the illegal activity.

In addition, the legislation provides protection against introduction of alien species. It is prohibited to introduce alien fauna species. Phyto-sanitary and veterinary controls are in place to prevent the introduction of alien species crossing state borders. Special regulations are in place to govern the discharging of ballast waters in Georgian territorial waters in order to prevent the introduction of undesirable living organisms.

### ***2.2.3 Forest Resources***

Forest Code (1999) amended several times regulates issues of ownership, protection, use, restoration and tending of State Forest Fund and its natural resources as well as issues of monitoring, supervision and law enforcement in the area of forestry. The goals of the code are:

- Protecting human rights and enhancing compliance to the law with regard to legal relations in the field of forest management
- Conducting forest tending, protection, and restoration with the purpose of conserving and improving climate-regulating, recreational and other useful natural properties of forests;
- Conserving and protecting unique natural and cultural environment and its specific components – flora and fauna inclusive, biodiversity, landscape, cultural and natural monuments located in forests, and the endangered plants species; regulating harmonized interrelations between these components
- Setting rights and obligations of forest users
- Meeting environment, economic, social and cultural needs of population through providing access to the forest resources in the scope compatible with scientifically defined allowable norms
- Defining main principles of forest management

#### ***Forest Ownership***



State, Georgian Orthodox Church or physical or legal persons may own Georgian forests. State Forest Fund is a public property and is managed by the Forest Agency, Legal Entity of Public Law under the Ministry of Environment<sup>2</sup>. The law allows for transferring ownership or leasing the forests through long-term (up to 20 years) concessions on forest utilization. The functions of physical management and control were separated from commercial activities. The Forest Department dispossessed a right of economic/commercial activity that has been delegated to the private sector.

#### *Forest Classification and Division of Responsibilities*

State Forest Fund of Georgia is divided into the Forests of Protected Areas and the State Forest Management Fund that includes both Forests of National and Local Importance. PAs forests are management by the APA, State Forest Management Fund of National Importance – by the Forest Agency and the State Forest Management Fund of Local Importance (Municipal forests) – by local municipalities.

Municipal forests encompass the following categories: 1) Resort zone: such zones are established around health resorts; 2) Green zone: this category can be assigned to forests adjacent to cities/settlements; 3) Forest with soil protection function and forest with water regulation function: These categories are assigned to forests, which do not fall in the above two categories. This category list is exclusive, i.e. all forests within the usable SFF fall under one of the described categories.

#### *State Forest Inventory*

State forest inventory includes assessment of forest conditions, species and age composition, quantitative and qualitative assessment of existing resources; identification of rare, endangered, threatened, relic and endemic plant species, biological and pest studies. Forest Inventories are conducted by the Forest Agency, APA and local authorities, within their competencies. Forest Inventories can be sourced out to physical or legal persons and can be conducted by finances other than state budget.

#### *State Forest Fund Management and Use Planning*

State Forest Fund management and use planning is based on the results of forest inventories and monitoring. It includes: elaboration of special conditions for the use of forests located on the slope between 30 and 35 degrees; identification of lots where it is possible to conduct cutting for general, special, social uses as well as sanitary cutting; elaboration of forest tending, restoration and afforestation measures, methods, timelines and related costs estimations; identification of lots for commercial logging. The Forest Management Plan covers 10-year period and relevant authorities within their own responsibilities develop it. Forest Use Plans are developed by the owners of General Forest Use Licenses or by the owners of Special Timber Production Licenses.

#### *State Forest Fund Monitoring*

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<sup>2</sup> In accordance with current restructuring process under the Ministry of Environment is expected to transfer mandate for forest management from the Ministry of Environment to the Ministry of Energy

State Forest Fund Monitoring is system of permanent observation, analysis and prognosis of forest conditions. Results of forest monitoring are to be reflected in State Forest management plans. Forest monitoring is conducted by relevant authorities within their own responsibilities. Monitoring results should be submitted to the State Statistics Service.

#### *Forest Protection Measures*

Forest Protection Measures are implemented by Forest Agency, APA or local municipalities within their responsibilities. Licensees are also obliged to comply with forest protection requirements set out in their licences. The Code sets a special protection regime for the State Forest Fund concerning recreation and green zones, floodplain forests and the subalpine forest belt. The general protection regime concerns forests that perform soil protection and water regulation functions.

Since 2000 the Presidential Decree on the Rules of Forest Use, Cutting, Forest Protection and Rehabilitation is in force. This regulation is aimed at preserving forests' soil-protection and water-regulation functions, and protecting the wildlife (envisaging the breeding period while planning the timber-harvesting activities). Places are defined ,where commercial cuts are not allowed (e.g. flood plain forests, sub-alpine forests, sites with the dominance of relict and endemic species, slopes steeper than 35 degrees, the forest zones that protect the banks of rivers, canals and water reservoirs). The rules also define the tree species authorized for cutting.

#### *Forest Use*

The Forest code lists various types of forest uses, including timber production, establishment of forest plantations, production of timber and non-timber products, forest use for agriculture, recreational, hunting or fisheries purposes, establishment of wildlife sanctuaries or farms, etc.

Forests can be transferred from the state to physical or legal persons for short-term (up to 1 year) and long-term (up to 20 years) use. According to the amendments to the law, stipulated from 2005 Law on Licences and Permissions, there are two types of licenses: General License issued for commercial logging and Special License issued for either establishment of hunting farms or for timber production. In addition, there is al license required for taking out of wildlife subject to CITES convention. Social cutting for fire wood and sanitary cutting are not subject to licensing. General licences can only be issued only in soil- and water-regulating forests. It is forbidden to conduct commercial cutting in floodplain forests. It is also forbidden to produce timber in sub-alpine zones. Only dead trees or felling can be used for timber production there. Licenses are issued through auctioning. Population has full right to enter the forests and collect non-timber product and wood chips without any permission. Until recently, there were limitations for local population to use secondary woods material and non-timber resources. Starting from 1 July 2011, these limitations will be void and rural population will be able to freely enter all forests, including forest lots concessioned out for long-term commercial use, and cut forests for own consumption (fire wood, building material, etc) as well as to collect non-timber resources. They should pay the special fees for this. Furthermore, maximum terms of validity of the concessions will be increased to 49 years and concessioners will be required first to develop the forest use plans and then to start the logging operations. In addition, they will be obliged to implement reforestation and afforestation measures.

#### *Forest Voluntary Certifications*

The Law allows for voluntary certification of state forest fund, its resources and its management by physical or legal persons.

#### *Law Enforcement and Liabilities for Non-compliance*

The Environmental Inspectorate implements Law enforcement in state forest fund. In addition, Forest rangers of territorial units of the Forest Agency are responsible for protection of forests against illegal activities. Persons violating forest code or related legislation are subject to criminal or administrative charges and may be required to compensate damage to the forests.

#### **2.2.4 Land Resources**

In Georgia the issues of land resources management and conservation, including protection against desertification/degradation, are regulated by a number of legal acts. One part directly relates and protection issues, while the other regulates the issues of land property and use. The first group includes: the Law on Soil Protection (1994), Law on Conservation of Soils and Restoration-Improvement of their Fertility (2003), the Law on Mineral Resources (1997) and; the Law on Oil and Gas (1999).<sup>3</sup> The second group includes: the Law on Ownership of the Agricultural Lands (1996); the Law on Compensation for Damage and Costs of Reclamation of New Lands Instead of the Agricultural Lands Transferred to Non-Agricultural Activities (1997) and the Tax Code (2010).

Generally, the existing legislation has liberalized land use practices, and created possibility for formation of the land market. At the same time, its enforcement is inefficient – market development process is very slow, and this is the main factor creating obstacles for land consolidation and elimination of degradation/desertification problems.

The use of privatised agricultural lands for non-agricultural purposes is prohibited. This means that the construction of buildings, or the construction and operation of industrial facilities on agricultural land is prohibited, with the exception of a private house or other facility for use by the landowner, which is allowed on agricultural lands. If it is necessary to use agricultural lands for industrial, or other urban purposes, the interested party must apply to have the category of use changed and pay the appropriate compensation, from 34,000 to 100,000 GEL per ha, depending on land location. The National Agency of Public Register within the Ministry of Justice is responsible for changing the designation of agricultural land categories, while the Ministry of Environment and Natural Resources of Georgia is responsible for changing of categories of lands designated as recreational areas, or agricultural lands within the administrative boundaries of Tbilisi and Batumi.

Regardless of land category, it is a requirement to remove and store topsoil for reuse for any land that is to be used for industrial or commercial purposes. The removed topsoil cannot be carried away from the site or sold. In case of temporary activity such as the mining of mineral resources, or development of a landfill, the land must be restored and re-cultivated using the stored topsoil.

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<sup>3</sup> There are a number of laws that are not directly connected to the land protection issues, but significantly influence this sector. These are: Law on Environmental Protection (1996), Law on Environmental Permits (2008), Law on System of Protected Areas (1996), Law on Plant Protection from Harmful Organisms (1994), Law on Pesticides and Agrochemicals, (1998), Law on Water (1997), Law on Nuclear and Radiation Safety (1998), Law on Fees for Use of Natural Resources (2004), Forest Code (1999).

Regardless of land ownership, all soils are subject to state protection. As such, it is prohibited to: 1) Cause any kind of pollution; 2) Arrange terraces of slopes without appropriate design and soil selection; 3) Degrade pastures through over grazing, in particular by maintain higher stocking density than permitted on high mountain pastures; 4) Damage the soil cover during forest use; 5) Fell or modify shelter belts or damage any other structure put in place for the prevention of soil erosion; 6) Use fertilizers, or other agricultural chemicals, which have not been tested, registered and approved for use in Georgia; 7) Conduct any other activity that would result in the deterioration of soil quality.

Before December 2010 Land reclamation issues were regulated by the Law on Land Amelioration (1997). The law covered land reclamation, reclamation activities and melioration association issues. On 17 December 2011. The law was annulled (for more details see part 3.2 below).

### ***2.2.5 Mineral Resource***

#### ***Scope and Objectives of the Law***

The Law of Georgia on Mineral Resources was adopted in 1996. Its objective is to ensure sustainable use of Georgia's mineral resources. The law regulates the legal issues of use and study of Georgia's mineral deposits, all kinds of mineral resources and underground vacuums as well as the legal relations that emerge during generation, storage and protection of wastes of mining and processing industries and construction and operations of underground facilities. The law does not cover gas and oil issues regulated by the separate statute on gas and oil.

#### ***Status of Georgia's Mineral Resources***

Mineral resources of Georgia are of state property and can be issued to legal or physical persons for the use and the study. The use of Georgia's mineral resources is paid. The ownership of the land where the mineral resources are located does not presume the ownership over the land's underground deposits.

#### ***State Fund of Mineral Resources***

Mineral resources of Georgia located on the territories of Georgia, in its continental shelf or territorial waters represent the State Fund of Mineral Resources, the rules and procedures for which are defined by the provision approved by the President of Georgia.

#### ***Classification of Mineral Resources***

In accordance with their economic value, Georgia's mineral resources are divided into two groups: 1) mineral resources of state importance and 2) mineral resources of local importance. Those of state importance are divided into the two sub-groups: 1.1 of special state importance and 1.2 of state importance. Classification of Georgia's mineral resources is done jointly by the Ministries of Environment and Economic Development and approved by the Prime Minister.

#### ***Use of Mineral Resources***

Types of Uses. In accordance with the law, following activities are considered as the use of mineral resources: exploration and/or extraction of mineral resources, mining and processing of minerals, use of

underground vacuums, construction and operations of underground storage facilities, collection of samples for museums and scientific institutes. All these uses are subject to licensing. State geological surveys, scientific studies, environmental monitoring, control of groundwater quality and quantity are not subject to licensing and should be registered by the state. In addition, use of mineral resources of local importance by the landowner for personal purposes is not subject to licensing. All lands allotted for use of its mineral resources subject to licensing should be registered as lands of the State Fund of Mineral Resources. It is prohibited to transfer the ownership of the license unless there is a legal basis and documentation for this. It is allowed to issue licence for multipurpose uses, e.g. for exploration, extraction and processing of mineral resources. If the licensee has a licence on exploration of deposits he/she will be given a priority if applies for the licence on extraction of mineral resources.

Terms of Validity of Licences. The term of the validity of the license issued for energy purpose is up to 45 years. The one for extraction of metals is up to 40 years, for extraction of construction materials – up to 30 years and, for extraction of ground waters and gases other than natural gas – up to 25 years; for exploration of deposits – up to 5 years and for construction of underground storage facilities – up to 45 years. In certain cases, when the use is considered of high state importance the licence can be issued permanently.

The Licence can be cancelled if the licensee violates the terms and the conditions of the licence.

Prohibitions. It is prohibited to extract inert materials from riverbeds. In addition, it is prohibited to extract mineral resources from river protection zones if these operations may destruct the stability of river beds and hydro-technical facilities. Furthermore, extraction operations from the dam to the place, where the river does not have enough sedimentation and in floodplain areas within the radius of 50 meters from the riverbed are not allowed.

Licensing Rules and Fees for the Use of Deposits and Mineral Resources. Licences are issued based on auction, which initially was conducted by the Ministry of Environment and currently, by the Ministry of Economy and Sustainable Development. Licence fee is one-time and consists of auctioning and resource use fees.

### ***2.2.6 Wastes and Chemicals***

#### ***Wastes***

Municipal and Hazardous Wastes. There is no single law on waste management in Georgia and the sector is governed by several legislative acts. First document is the Law of Georgia on Import and Transit of Wastes within the Territory of Georgia. Import of non-hazardous waste substances is allowed only in case of re-export or processing. The law defines an extensive list of wastes allowed for import for the above purposes.

Transit and export of waste from Georgia is regulated by the Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal (For more details see below section 2.3).

According to existing legislation, the state does not limit production of waste. Only general principles of waste minimization and recycling are set out in the framework Law on Environmental Protection.

Certain waste management operations are regulated by environmental permitting legislation. The Law on Environmental Impact Permit among activities subject to environmental impact assessments and environmental permitting lists such operations as waste processing, utilization of municipal solid waste, land filling, incineration, waste storage and construction of wastewater treatment plants (WTP), as well as treatment or disposal of toxic and any other types of hazardous wastes. These requirements are mainly applied to the operators of facilities (landfills and incinerators) and to a lesser extent to the waste management operators handling the collection, transportation and disposal of waste on existing

Joint Resolution of the Minister of Economic Development and the Minister of Environmental and Natural Resources Protection (1996) on the Rules for Removing Solid and Liquid Municipal Waste sets rules on how the waste collection service should be provided and the procedure for payment of this service. The resolution mentions that a service provider is responsible for providing customers with special containers (bins) for waste separation.

The Order of the Minister of Labour, Health Care and Social Protection on the Adoption of Rules for the Collection, Storage and Treatment of Medical Wastes (2001) sets regulations and norms for collection, disinfection, transportation, storage, treatment and disposal of wastes from medical institutions. The Order also classifies medical wastes into five categories: non-hazardous, hazardous (risky), particularly hazardous, medical waste equivalent to industrial waste, and radioactive waste from medical institutions. Only non-hazardous wastes can be disposed of at municipal landfills. However, this Order does not clarify the treatment of the different types of waste.

The Order of the Minister of Labour, Health Care and Social Protection on Sanitary Rules and Norms for Arranging and Operating Municipal Solid Waste Landfills (2003) contains provisions for construction, O/M, sanitary-hygienic control of the site and the labour of municipal solid waste landfills. The Order sets the admissible amount of toxic industrial waste that may be disposed on landfills, and lists waste types that may not be placed on MSW landfills. It also prohibits burning of waste at the landfills.

Organic Law on Local Self-Governance (2005) delegates responsibility for waste management to local municipalities, who should perform it in compliance with Georgian law and at their own risk.

The Law on Environmental Protection Services (Inspectorate) (2007) defines rules and procedures for functioning of Environmental Inspectorate, also providing that inspectors may only enter facilities that have environmental permits.

The Law on Public Health Care (2007) lays down the responsibilities of the Ministry of Labour, Health Care and Social Protection. The Ministry is responsible for biological safety and the establishment of rules for laboratories working on hazardous biological issues, rules for maximum allowed concentrations in substances on water, in the atmosphere, etc, and rules for the disposal of hazardous substances.

Radioactive Wastes. The Law on Nuclear and Radiation Safety (1998) requires creation of a catalogue listing radioactive sources and their quantitative and qualitative properties, as well as inventory of existing sources in the country. The Law also lays down rules for transportation, import, export and transit and issues related to selection of the storage territory and facility for the radioactive waste. It bans movement of any kind of radioactive waste within the territory of Georgia.

Draft Waste Law. Recently, a draft of framework law on Waste Management has been developed. It classifies wastes according to origin as per EU requirements and incorporates other major EU requirements for waste management. Detailed regulations on wastes will be developed under the EU Twinning program.

#### *Chemicals and Hazardous Substances*

Georgia is a party to several international treaties restricting the use of chemical substances dangerous for the environment (for more details please see part 2.3 below).

At the national level the substances regulated by the international Conventions are listed in the special List of “Materials of Limited Marketing”, that means that production, or international and internal shipments of these substances are subject to special permitting. However, the relevant regulation is suspended until July 1, 2011.

The 1998 Law on Pesticides and Agrochemicals regulates permit issuance for the production and trade, as well as the import and export of pesticides and agrochemicals, their transportation, storage and use. The Law requires testing of pesticides and agrochemicals, and their registration in the State catalogue. Prohibited pesticides are the subject of the 1998 Law on Hazardous Chemical Substances.

There are additional requirements regulating pesticides in Georgia. In particular, only pesticides registered by the Food Safety, Veterinary, and Plant Protection Service of Georgia can be produced, imported, or exported. There are currently 168 active substances and up to 350 pesticide preparations registered by this Service. Mostly those are the pesticides registered in USA or EU and listed either in the Appendix I of the EU Directive 91/414/EEC, or in the USEPA List of the Registered Active Substances. The Food Safety, Veterinary, and Plant Protection Service monitors on a regular basis pesticides’ sold in Georgia in order to detect illegal sale of unregistered pesticides.

#### *2.2.7 Climate Change*

There is no separate legal act in Georgia that regulates climate change issues, including climate change mitigation and adaptation. Georgian Laws on Environment Protection and on Ambient Air Protection only have general statements calling for reduction of Green House Gas (GHG) emissions. Georgia, as a non-Annex I Party to the UNFCCC, has no international commitments to mitigate GHG and, consequently, no national standard limits are set for GHG emissions so far. Nor does the legal requirement exist for conducting GHG inventories.

Regardless of the requirement to create legislation promoting energy efficiency, included in the document adopted by the Parliament “Major Directions of State Policy in Energy Sector”, concrete decisions have not been made yet. Consequently, there is no legislation promoting energy efficiency so far. Nor does any legislation exist that promotes utilization of local renewable energies, except for hydropower (for more details please refer to chapter 3.4).

Similar to the legislation on climate mitigation, the legal and institutional framework for preparation and implementation of adaptation measures does not exist in Georgia. It is necessary to establish responsible units for climate adaptation monitoring to identify climate change (CC) impacts and potential losses. Their terms of references for ordinary and emergency conditions should also be identified.

## **2.3 International Environmental Agreements related to Natural Resources, Wastes, Climate Change and the Status of their Implementation**

According to the 1996 Law on Environmental Protection, national obligations under international environmental agreements are an integral part of national legislation and prevail over national legislation. The 1997 Law on International Agreements still provides the framework for the adoption and ratification of international agreements.

Georgia is a party to 24 international environmental agreements (See annex 2). The Ministry of Environmental Protection and Natural Resources through its International Relations and Policy Department or various environmental media-specific departments is a focal point for implementation of these treaties. It cooperates with line Ministries and relevant agencies in the process of implementation of international obligations.

### ***2.3.1 Natural Resources***

#### *International Waters*

Fresh Waters. Although not being a party to the UNECE Helsinki Convention on the Protection and Use of Trans-boundary Waters and Lakes, Georgia signed the protocols of the convention on Water and Health and on Civil Liability and Compensation for Damage Caused by the Trans-boundary Effects of Industrial Accidents on Trans-boundary Waters (Kiev, 2003). None of the instruments has been ratified by the Georgian Parliament to date.

Georgia is proceeding with preparations for the ratification of the Water Convention. Under the UNECE/OSCE Project “Implementation of the UNECE Water Convention and Development of an Agreement on the Management of Trans-boundary Watercourses Shared by Georgia and Azerbaijan”, an assessment of the legal and institutional prerequisites for the country’s implementation of the Water Convention was prepared in 2009. In addition, several international programs provide assistance to riparian countries to improve cooperation and introduce joint mechanism for the management of rivers of both Black and Caspian Seas (for information that is more detailed please see part 2.4 below).

Marine Waters: Black Sea. Georgia ratified the Bucharest Convention on the Protection of the Black Sea against Pollution in 1994 and its Protocols on Biodiversity and Landscape Protection and on the Protection of the Marine Environment of the Black Sea from Land-based Sources and Activities - in 2009. From 2003, the country started participation in the activities of the Advisory Council of Black Sea Commission through its Division of Water Resources Management of the Ministry of Environmental Protection and Natural Resources and submission of annual reports to the secretariat since then.

A number of activities have been implemented in the country to protect the Black Sea since the ratification of the convention. Specifically, the country has developed the Integrated Coastal Zone Management (ICZM) strategy and action plan. To manage the process of ICZM development in Georgia, the State Consultative Commission (SCC) for ICZM was established in 1998. Although this body functioned until 2006, there were no tangible results of its activities. To continue the work of the SCC, the ICZM Working Group for Georgia was initiated in 2007. It has coordinated the process of evaluating the results of the ICZM process over the past years and has initiated a new cycle by facilitating the development of the ICZM Strategy for Georgia. The draft Strategy was finalized in 2009. The draft reflects international obligations by Georgia under the Bucharest Convention as well as its Protocols. It



complies with the European approaches to ICZM (Communication 2000/547 from the Commission of the European Communities to the Council and the European Parliament on Integrated Coastal Zone Management: A Strategy for Europe).

### *Biodiversity*

Georgia joined the UN Convention on Biodiversity (UNCBD), a framework convention on global biodiversity protection in 1994. Since then, the country has made significant progress: It has acceded such important conventions as Ramsar Convention on Wetlands of International Importance, especially as Waterfowl Habitat; CITES Convention on International Trade with Endangered Flora and Fauna; Bonn Convention on Migratory Wildlife Species Protection; Agreements on the Conservation of Bats in Europe (EUROBATS), on the Conservation of African-Eurasian Migratory Water birds (AEWA) and on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS). The country has also ratified the CBD Cartagena Protocol on Bio safety. The country has adopted national legislation on biodiversity conservation and sustainable use, protected areas system and forests as well as the Biodiversity Strategy and Action Plan (2005). It has established and developed an international standard based protected areas system that currently covers about 7.14% of total land of Georgia over 70% of the UNCBD target - 10%; It has developed a new Red List of species in accordance with IUCN criteria; developed or currently is in the process of development of management plans for a number of important species or species groups and for protected areas and started implementation of these plans, though with low pace due to the lack of financial resources and capacities; conducted a number of researches to identify important bird areas (IBA) as a result of which 31 habitats of global significance for birds (IBAs) and 17 areas especially interesting for biodiversity conservation are included in the Emerald Network of Europe. Areas significant for plants (IPAs) are also being identified. In the area of agro-biodiversity, the country has established the gene bank, conducted studies of and established a GIS-compatible database on medicinal plants and crop wild relatives and land races in one of the importance agriculture regions of Georgian and developed a sustainable model for conservation and utilization of many traditional crops and fruit species there; furthermore, the law on organic agro-industry has been adopted. At present, traditional agriculture is practiced by about 1,000 farmers, although their share in the agricultural sector is not significant. The country improved legislation towards and established national regulatory mechanisms (export quotas and procedures) for a number of plant species subject to CITES as well as for hunting and fishing. Significant efforts have been made to restore important ecosystems, including riparian forests in Alazani River basin. Georgia has started building up biodiversity monitoring system and established biodiversity Clearing House Mechanism (CHM) with a linkage to various biodiversity meta-databases available in Georgia. Regardless of these successes, a lot has to be done in the areas of biodiversity monitoring, including wetlands inventories, public awareness, bio-safety (gene-modified organisms); law enforcement especially, prevention of illegal hunting and fishing, expansion of PAs, improvement of management effectiveness of PAS, protection of biodiversity outside PAS, forestry, regulation of the use of non-timber resources for food, medicinal or decorative purposes, etc.

### *Land Resources*

UN Convention to Combat Desertification (UNCCD) was adopted in 1997 and Georgia signed it at the date of its adoption. The Convention was ratified by the Georgian parliament in 1999 and the country became a party to it. The objective of the convention is to combat desertification and land degradation and, mitigate the results of droughts through implementation of effective measures. More specifically,

the parties to the convention shall integrate desertification and drought considerations in national planning, develop integrated water and land resources conservation and sustainable use strategies, study and implement measures to eradicate or reduce the causes for desertification/land degradation, develop and implement national and regional programs against desertification/land degradation that among others should include establishment and operations of drought early warning and response systems, food safety systems, development and implementation of land reclamation measures, etc.

In order to meet the requirements of the UNCCD, Georgia has developed and adopted a National Action Plan to Combat Desertification and started implementation of some of its measures, e.g. restoration of wind breaks in arid areas of Georgia, restoration of floodplain forests in one of the trans-boundary basins, rehabilitation of irrigation systems, flood control measures, etc as well as integrated land degradation/desertification issues in the National Environmental Action Plan (to be finalized and adopted in 2011) and Mid-term Expenditure Framework of Georgia, a four-year plans of actions of the Government of Georgia to be financed from the state budget. In addition, it has integrated land degradation issues in environmental media-specific strategies and plans including BSAP and the First and the Second National Communications to the UNFCCC. In terms of setting up the coordinating inter-ministerial body, although the National Commission on UNCCD was created in 2001, in fact it has not ever become functional. In the areas of monitoring and early warning systems, although some improvements have happened compared to 1990s, the situation still stays grave especially in the field of agro-meteorology. Unfortunately, there is no law or sub law on environmental monitoring in the legislation that would clearly define roles and responsibilities of agencies carrying out environmental monitoring. Unified and systematic procedures and methods of data collection, processing, exchange, reporting and dissemination of information are absent. Issues of environmental monitoring are very generic and spread in different environmental laws. In fact, land monitoring is the least developed field in Georgia. The observations of the soil quality have not been carried out since the break-up of the Soviet Union. Land registration and cadastre covering only quantitative parameters of lands has been implemented with financial assistance of The Credit Bank of Reconstruction of Germany (KFW). The major part of the environmental data in Georgia is available only on hard copies. Digitalizing data is rarely performed. 150 years old historical data are stored in archives of different agencies where the minimum safety requirements are not met. The cooperation among different agencies is weak. The role and responsibilities in data exchange among agencies is not defined

### ***2.3.2 Wastes and Chemicals***

The Vienna Convention on the Protection of the Ozone Layer (1985) and the Montreal Protocol on Substances that Deplete the Ozone obliges Georgia to phase out the production of a number of substances believed to be responsible for ozone depletion. So far, Georgia has been able to completely phase-out consumption of CFC-12 and now it is in the process of elimination of the use of HCFCs.

The Stockholm Convention on Persistent Organic Pollutants obliges Georgia to phase out the most dangerous nine pesticides as well as highly dangerous industrial chemicals (polychlorinated biphenyls) and to prevent generation of the highly dangerous by-products (dioxins and furans). So far, Georgia has drafted the National Implementation Plan (NIP) for PoPs management, which is in the process of a review and approval by the government. A number of state or donor funded activities have been implemented to collect and safely dispose obsolete PoPs pesticide in Georgia.

Basel Convention on the Trans-boundary Movement of Wastes, which Georgia acceded in 1999 bans transit and import of industrial, municipal or other type of hazardous and radioactive wastes. Import of non-hazardous and non-radioactive Wastes for recycling, re-export or any other purpose, listed in Annex IV, Part B of the Convention is allowed. Import can only be implemented if there is a prior consent of the government of the importing country. Meanwhile, transit and export of non-hazardous and non-radioactive wastes with a view to its treatment and disposal or any other purpose listed in Annex IV, Group A of the Basel Convention, is prohibited. The convention also required country provide on an annual basis list of movements of wastes through its territory. This is done through the Division of Waste and Chemicals Management of the Ministry of Environmental Protection and Natural Resources in cooperation with Customs service. During the period under review, Georgia submitted the reports to the Convention Secretariat for 2003, 2004 and 2006. Reports for 2005, 2007 and 2008 were not submitted.

Georgia ratified the Rotterdam Convention on the Prior Informed Consent Procedure Hazardous Chemicals and Pesticides (1998) in 2006. The document regulates international trade of 40 hazardous chemicals. In brief, the prior notification and consent of the receiving country is required prior to international shipments of the listed substances.

### *2.3.3 Climate Change*

Georgia ratified the UN Framework Convention on Climate Change (UNFCCC) on October 29, 1994. The ultimate goal of the Convention is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. According to the Convention, developing countries and a part of countries with economies in transition are classified as the parties not included in Annex I and they are not bound with particular quantitative obligations on reduction of greenhouse gas emissions. Hence, Georgia as a non-annex I country does not have any legal obligation to reduce its Green House Gas Emissions. Its only requirement is the development and submission to the convention secretariat on a regular basis national communications, which among others include detailed GHG inventories.

Since the ratification of the convention, Georgia has developed and submitted two national communications to the UNFCCC secretariat and launched the preparation of the third communications. Within this framework, the country has also developed a comprehensive database on Green House Gas emissions covering 1990 through 2009 and as well, created a significant knowledge base on climate vulnerability and risk, climate and GHG modelling, etc. In addition, the country has joined the Copenhagen Accord and has committed itself to develop and implement Low Carbon Development Strategies (LEDS) as well as the National Adaptation Plan for Action (NAPA). In addition, The Mayor of Tbilisi has signed a Covenant of Mayors and committed the city to reach 40% cut in GHG emissions by 2020. The country through assistance of various donors as well as through its own resources and attracting FDIs started implementation of a number of mitigation measures, including development of hydropower and implementation of energy efficient measures. The government plans to completely update its car fleet and use electric or hybrid vehicles instead of fuel-engined vehicles. Furthermore, in the area of climate adaptation, the country started restoration of windbreaks in climate-vulnerable areas, strengthening of capacities for flood management, etc.

The Kyoto Protocol of the Convention on Climate Change envisages the use of the so-called Clean Development Mechanism (CDM), by means of which the developed countries can meet a part of their

commitments of reducing greenhouse gas emissions at the lowest cost through introducing clean technologies in developing countries and buying reduced/avoided emissions as a result of introduction of these technologies. Georgia has ratified the Kyoto Protocol and appointed the Ministry of Environment as a National Designated Authority (DNA) for CDM. A National Council for Clean Development Mechanism has been set-up and become operational to define under fixed criteria, whether the CDM project promotes the sustainable development of the country, how the CDM project corresponds to the national and/or sectoral policy and to make a decision about granting an official consent on behalf of the Georgian government for implementation of the CDM project.

Regardless of above achievements, there are a number of issues that need to be addressed towards the implementation of UNFCCC and Kyoto Protocol. Specifically, current national capacities for CDM project and program development are weak, at both institutional and staff level. Line Ministries, private industries, including local banks, research institutes, and NGOs have poor knowledge and understanding of the CDM. In addition, the existing energy legislation is less favourable for development of renewable energies and energy efficiency, especially for development of small hydropower and other alternative energies; There is limited financing for renewable energies and there is little knowledge on river hydrology due to the significantly diminished hydro-meteorological monitoring in the country.

## **2.4 Existing Policy and Planning Framework**

### ***2.4.1 Integration of Environmental Considerations into Development and Sectoral Planning***

#### *Mid-term Expenditure Framework*

In Accordance with the amended law on the State Budget of Georgia the Ministry of Finance of Georgia in coordination with all the Ministries develops a four-year program on Basic Data and Direction (BDD) that consists of medium-term macroeconomic and fiscal forecasts as well as major directions of the country's fiscal policy. This is a major mid-term expenditure framework (MTEF) of the country where the priorities of all the Ministries, including the Ministry of Environment for the next 4-year period appear.

In accordance with the latest BDD (2009-2012), the country's priorities in the area of environment are as follows: 1. Provision of efficient use of natural resources; 2. Development of the system of environmental protection; and 3. Improvement of environmental monitoring and forecast. For the first priority direction the focus is made on continuation of forest management reform to better protect forests, reduce illegal logging and utilize forest resources more efficiently as well as to efficient management of water resources. Within the second basic direction the priorities are given to development of PAs, waste management reform and promotion of implementation of CDM in Georgia. Within the third major direction the focus is made on building of knowledge base and early warning systems on natural disasters and development of ambient air quality monitoring. The total cost estimated for the activities is GEL 139 million over a four-year period with around GEL 35 million to be allocated annually from the state budget. This does not include environmental activities to be implemented by the local municipalities.

#### *European Neighborhood Policy of the European Union (ENP)*

The EU-Georgia Action Plan based upon the European Neighborhood Policy of the European Union sets strategic objectives of cooperation between Georgia and the EU. The Action Plan was endorsed by the

Government of Georgia and the European Commission (EC) in November 2006. Implementation of this plan will be a huge step towards the Georgia's objective of further integration into European economic and social structures. Promotion of sustainable development including the protection of the environment is one of the priority areas of the Action Plan. Setting appropriate conditions for good environmental governance as well as taking steps for prevention of deterioration of the environment, protection of human health and rational use of natural resources is amongst the general objectives of this document.

In order to implement the EU-Georgia Action Plan each ministry of Georgia develops annual action plans and reports to the State Minister for Euro-Atlantic Integration about the state of implementation of their action plans. The Office of State Minister sends the summarized report to the EU annually. EU evaluates the reports and provides recommendations that are reflected in the next action plans of the ministries of Georgia.

#### *Eastern Partnership*

Eastern Partnership is an initiative of the EU member states and eastern European countries. This process was launched in 2009 and aims to improve the political and economic trade-relations of the six Post-Soviet states - Ukraine, Belarus, Moldova, Azerbaijan, Armenia and Georgia - with the European Union. Eastern Partnership provides four thematic platforms for cooperation. Platform 2 on "Economic Integration and Convergence with the EU Policies" sets Environment and Climate Change as one of the core objectives to be addressed within the framework of this initiative. Prevention of, preparedness for, and response to natural and man-made disasters as well as environmental governance are also among the flagship initiatives of Eastern Partnership process.

Georgia is committed to the objectives of the Eastern Partnership and strives to reflect them into its action plans and programs.

#### ***2.4.2 Framework Environmental Policy***

Legal provisions on comprehensive environmental planning process are set out in the Law on Protection of Environment. It envisages development of environmental planning system including long-term strategic planning (sustainable development strategies), five-year planning (national environmental action plan) and environmental management planning for various environmental media. Environmental action plans shall also be developed at regional, local and sectoral levels.

Georgia does not have a strategy for sustainable development and yet development of this document is not among the government priorities.

In 2000, the First National Environmental Action Plan (NEAP) was approved. It represented the major document of the environmental policy and included structural and non-structural measures necessary for the solution of priority problems for 2000-2004. Due to insufficient financing, most of the measures defined by the NEAP have not been implemented. In November 2009 development of the second NEAP started. The plan will cover the period of 2010-2015 (for more detailed information please see part 2.4.2 below).

## *National Environmental Action Plan*

Current Status. The National Environmental Action Plan (NEAP) is a significant policy document, which sets up short- to medium-term targets and priority environmental actions for the country. Elaboration of the second NEAP for 2008–2012 was initiated in 2006 and the draft was finalized in mid-2007 to cover the period 2008–2012. The elaboration of the second NEAP enjoyed the financial backing of UNDP and was formally carried out by the Ministry of Environment Protection and Natural Resources. It aimed among others at prioritizing environmental problems, developing solutions and assessing the social and economic reforms that are underway in the country, as well as increasing the environmental planning capacity of the Ministry of Environment Protection and Natural Resources and boosting compliance with national and international environmental obligations.

In 2009 development of a new version of the second NEAP started by the Ministry of Environment Protection and Natural Resources of Georgia with financial support from the Government of the Netherlands. The draft document has recently been finalized and put under the public discussion.

### *NEAP Priorities*

Water Resources. In the area of water resources management, the NEAP sets following targets: establishment of effective water management system including introduction of integrated river basin planning and management in pilot basins and adoption of a new law on water; setting up of effective water pollution prevention and water abstraction control mechanism through upgrading the permitting system; reduction of water pollution from untreated municipal wastewater; reduction of diffuse sources in agriculture.

Biodiversity. In the area of biodiversity protection and sustainable use the NEAP's targets are as follows: rehabilitation, protection and conservation of viable populations of selected endangered species and habitats; development of an efficient protected areas network; Improvement of the effectiveness of the PAs' management through the capacity building of its administrations and introducing mechanisms for financial sustainability; creation of proper data base for biodiversity conservation and sustainable management of biological resources by means of developing the relevant monitoring system; development of Bio-safety National System to avoid/minimize the risks connected to using of genetically modified organisms.

Forest Resources. In the area of protection and sustainable use of forest resources the NEAP sets following targets: Prevention of neglectful/harmful unsustainable forestry practices; Reduction of unsustainable logging and diminishing unsustainable grazing.

Land Resources. In the area of land resources management, the NEAP sets following targets: improvement and strengthening the planning, management and evaluation systems relating to land resources; reduction of the degraded land areas and improvement of the soil quality. Enhancement of existing capacity of the spatial land information system to ensure improved management of land resource through application of modern tools and technologies.

Mineral Resources. In the area of mineral resources management the NEAP sets following targets: clean-up of abandoned mining sites; introduction sustainable practices for existing and new mining sites;

improvement of groundwater monitoring system; adoption of sustainable practices for groundwater abstraction.

Natural Disasters. In the area of natural disaster risk reduction the NEAP sets following targets: improvement/modernization of early warning system (short, middle and long-term); Prevention/mitigation of negative impacts of floods and flash floods in river basins of Georgia; rehabilitation of artificial influence activities on some hazardous events (hail, drought, snow avalanches);

Wastes. In the area of waste management the NEAP sets following targets: Improvement of household and hazardous waste management (collection, transportation, and disposal); reduction of environmental pollution and insurance of health safety from accumulated wastes.

Climate Change. In the area of climate change the NEAP sets following targets: implementation of urgent identification of climate change impacts on other regions and sectors; Reduction of GHG emissions

### ***2.4.3 Environmental Media-specific Policies***

There are a number of environmental media-specific strategies and/or action plans addressing certain priority environmental issues. Specifically, an Integrated Coastal Zone Management Strategy has been developed and is currently under the agreement procedure; a National Strategy and Action Plan for the Protected Areas System is also being developed together with the Sustainable Financial Plan for the PAS. A Forestry Strategy is also under process of elaboration. Development of a waste management strategy and Integrated Water Resources Management Plan is also envisaged.

Most of international conventions require that the country develop national programmes for their implementation and regularly report on the performance according to those programmes. Such programmes/strategies have been developed for the Biodiversity Convention (Biodiversity Strategy and Action Plan – BSAP), the Convention to Combat Desertification (National Action Program-NAP), the Montreal Protocol on Ozone Depleting Substances (CFC Terminal Phase-Out Management Plan - TPMP and; HCFC Management Plan - HPMP), and the Convention on Persistent Organic Pollutants (National Implementation Plan - NIP). Furthermore, the country has expressed its willingness to develop the Low Carbon Development Strategy and the National Adaptation Program of Action under the UNFCCC.

So far, only the UNCCD NAP and the CBD BSAP are formally adopted by the GoG. Unfortunately, the NAP for the period 2003–2007 had no accompanying budget and apparently, none of its proposed activities was carried out.

It is noteworthy to mention that the plan for the conservation of the Caucasian ecoregion that is based on ecosystem approach has been elaborated and approved by the GoG. The document defines a complex of activities (conservation, management, restoration, capacity building, public awareness and legislative and institutional changes) for the preservation of the following ecosystems of the Caucasus: freshwaters, sea and coastline, forests and mountains, including trans-boundary ecosystems.

## **2.5 Institutional Framework**

### ***2.5.1 Government Institutions***

*Ministry of Environmental Protection and Natural Resources*

Central Unit and Specialized Agencies. The Ministry of Environment Protection and Natural Resources was until recently responsible for environmental protection and management of natural resources. It through its Biodiversity Service, Agency for Protection Areas, Forest Agency and Land Management Service managed biodiversity outside and inside protected areas, forest resources and land resources. Land management service although being responsible for protection of land resources and management of land uses, in practice dealt primarily with land allocation for various land uses as well as with change in land use categories. Forest Agency was primarily responsible for the protection of State Forest Fund of National Importance, but did not have the responsibility for licensing of forest uses, although it participated in the identification of forest lots for short to long-term leasing. Water resources protection and some aspects of management of the water use (water accounting, water registry, participation in environmental permitting, etc) were dealt by the Water Resources Division of the Integrated Environmental Management Department of the Ministry. Two separate divisions (Division of the Wastes and Chemicals Management and, Division of the Air Protection) of the Department of the Integrated Environmental Management dealt with wastes and chemicals as well as with climate change related issues. Environmental Permitting was under the responsibility of the Service for Environmental Permitting. Environmental Inspectorate of the Ministry with its territorial bodies of Kakheti Bureau, Kvemo Kartli Bureau, Central East Bureau, Central West Bureau, Samegrelo-Zemo Svaneti Bureau, Ajara Bureau, Samtskhe-Javakheti Bureau, Conventional Inspection of Black Sea Protection and Zemo Abkhazeti Bureau was responsible for compliance assurance monitoring and control. The National Environmental Agency, legal Entity of Public Law, a quasi-autonomous agency was in charge of environmental monitoring, including hydro-meteorological monitoring and forecast, monitoring and prognosis of natural disasters and planning and implementation of disaster risk reduction measures, primarily river bank reinforcement measures.

Currently, the government is in the process of restructuring the Ministry of Environment that envisages transfer of a number of environmental functions, primarily, the functions for the use of natural resources to the Ministry of Energy. More specifically, just recently licensing of the use of natural resources has become the function of the Ministry of Energy together with environmental compliance assurance and control, river bank reinforcement has been transferred to the Ministry of Regional Development and Infrastructure and, land fertility and agro-chemicals issues will be governed by the Ministry of Agriculture. Draft statutes of the Ministries of Environment and Energy have already been prepared.

In accordance with the new statute, the Ministry of Environment either through its departments and services or through its specialized agencies carries out following functions: participation in development of laws; development of relevant sub-laws and regulations; participation in development of a state environmental protection policy and its implementation; participation in development and implementation of country-wide economic development policies and strategies; management of protected areas system; hydro-meteorological and ambient environmental quality monitoring, including background radiation level monitoring; protection of land, water, air and biodiversity; management of wastes and chemicals; hydro-meteorological, geodynamic and anthropogenic disaster risk assessment, monitoring and forecasting; development and coordination of implementation of disaster risk prevention plans and coordination of implementation of such plans; development of recommendations for emergency ecological situations; planning of measures against desertification/land degradation and coordination of implementation of these measures; setting-up ambient air quality standards; development and implementation of policies for protection of wildlife; participation in setting-up quotas



for wildlife use; regulation of animal populations for scientific-research purposes; participation in development of management plans for hunting and fish farms; carrying out of ecological expertise of activities subject to environmental permitting and, issuance of environmental permits; licensing/permitting of trade with species subject to CITES; inventory of pollution sources and pollutants emissions; inventory of green house gases, development and coordination of implementation of climate mitigation and adaptation measures; setting-up rules for regulation of ozone depleting substances; participation in development of limits for pollutants emissions into the air and effluent discharges into surface waters; coordination and monitoring of compliance with international environmental treaties and agreements.

In accordance with the new statute, the Ministry of Environment consists of following structural units: a) internal audit department; b) legal department; c) environmental permit department; d) environmental policy and international relations department; e) integrated environmental management department; f) PR and communications service; g) biodiversity protection service and; h) administration of the Minister. In addition to this, two semi-autonomous entities: Protected Areas Agency and National Environmental Agency stay under the supervision of the Ministry. Regional offices of the Ministry in accordance with the restructuring scheme are abolished.

The Ministry of Energy that until recently was tasked with preparing policies for the energy sector, ensuring the future development of the energy sector and, overseeing the construction and rehabilitation of renewable energy and thermal power stations, high-voltage power transmission lines and works in the natural gas sector, now has become a Ministry of Energy and Natural Resources. It, in addition to energy-related functions, has the functions for implementation of policies in the fields of the management and the use of natural resources and the nuclear and radiation safety. More specifically, in relation to natural resources, the Ministry defines priorities for sustainable management and use of natural resources, including forest resources and coordinates their implementation; participates in development and implementation of a state policy in the field of natural resource use; implements the state policy in the field of management of mineral resources; coordinates activities of state agencies and cooperates with non-governmental organizations; develops and approves relevant norms (limits, quotas, etc.) for the use of natural resources; issues or cancels licences/permits for the use of natural resources; carries out compliance assurance monitoring and control of adherence to environmental and natural resources use licence/permit conditions; regulates and controls activities in the field of nuclear and radiation safety; develops priority measures for sustainable use of natural resources, including forest resources.

Within the current restructuring scheme of the state environmental management sector, following agencies have moved to the Ministry of Energy: Forest nursery as a legal entity of public law and; Forestry agency, licensing department of the Ministry of Economic Development and the State Gas and Oil Agency altogether merged under a larger natural resources agency, entity of public law. Furthermore, the Environmental Inspectorate has become a subordinate of the Ministry of Energy as well.

The Agency for Natural Resources under the Ministry of Energy and Natural Resources in accordance with its draft charter has the following objectives and functions: management and rational use of natural resources, sustainable use of biodiversity within the territory of the state forests through issuance of hunting permits on wildlife species, except for migratory birds; demarcation of boundaries of

the state forest fund; management of state forest fund, including its state inventory, monitoring, protection and restoration; regulation of forest use through issuance of tickets on the use of wood resources and production of timber and, issuance of special licences on forest use; production of fire wood and supply of physical and juridical persons with fire wood in the amount defined by the state; issuance of permissions on agriculture and non-agriculture use of lands of the state forest fund; control of state forest fund; issuance of natural resource use licences and control of compliance with the licence conditions; approval of natural resource reserves and setting-up of natural resource use quotas; carrying out of state inventory and cadastre on mineral deposits; establishment, maintenance and update of state database and clearing house on mineral deposits; inventory of all geological surveys or mineral resources extraction activities; development of unified database on oil and gas deposits and related operations, including extraction, processing and transportation of these resources; development of state regulations in the fields of oil and gas; technical and environmental supervision and control of oil and gas operations; issuance of all relevant permits on gas and oil operations; and attraction of local and foreign direct investments in the areas of natural resources and gas and oil.

#### *Line Ministries*

One of the core tasks of the Ministry of Labour, Health and Social Affairs is to ensure the protection of public health, according to its Statutes adopted on 31 December 2005 by Governmental Resolution No. 249, art. 2 “The Annual National Report on Health Condition of Georgian Citizens” reflects the impact of environmental conditions on public health, particularly the sanitary condition of ambient air, the sanitary condition of water supply and ionizing radiation.

The Ministry of Economic Development, according to its Statutes, adopted on 10 September 2004 issues licenses for the use of natural resources and approve quotes together with the Ministry of Environment Protection and Natural Resources.

The Ministry of Education and Science has a key role in advancing environmental awareness among the public at large. According to the “National Objectives of General Education” approved via Decree No. 84 of 18 October 2004, paragraph B states that on the basis of experience gained within the general education system of Georgia, adolescents should “be able to maintain and protect the natural environment: An adolescent shall be aware of the natural environment in which s/he lives, what kind of harm may be caused to the environment by the activities of a person, and how to maintain and protect the natural environment.”

The Ministry of Agriculture plays a key function due to its responsibility for monitoring drinking water quality. Other functions of the Ministry include ensuring the competitiveness of agricultural products from efficient agriculture through elimination of factors preventing agricultural development by means of uniform public policy and legislation; the assurance of the epizootic and phyto-sanitary safety of Georgia and recognition of the country as a reliable trade partner; and the assurance of food safety through the exercise of State oversight. It is also responsible for developing an agriculture infrastructure, reforming the management of irrigation systems, developing the wine industry and anti-forgery measures, and ensuring food safety and product quality.

Any kind of normative acts and regulations (drafts of laws, statutes or decrees), including those affecting the environment, should be submitted for approval to the Ministry of Justice; after their approval, they

are registered and officially published by the Ministry (except for governmental decrees, which are published by the Chancellery).

The Ministry of Foreign Affairs is responsible for ensuring the coordinated action of executive bodies while directing international relations. In addition, it determines the advisability of acceding to international treaties or covenants, according to the explanatory notes of the corresponding authorities, coordinates their preparation and acts as a depositary of the signed document. The Ministry is responsible for developing the drafts of international agreements of Georgia, in the context of negotiations with foreign countries and international organizations (and for monitoring the implementation of international agreements).

The Ministry of Finance plays a key function, since it is responsible for ensuring that the Government's budget is based on MTEF principles.

The Ministry of Regional Development and Infrastructure, albeit relatively new (established in 2008), covers regional development policies, State regulation of transportation, implementation of unified State policies on issues of development, planning and scientific and technological progress with regard to car transportation and international and domestic road networks, as well as State monitoring of construction works, including construction works of municipal water supply systems being under the responsibility of the LLC United Water Supply Company of Georgia. Its Statutes do not foresee direct environmental tasks, but infrastructure and regional development have clear links to the environment and sustainable use. The Ministry coordinates development of regional and municipal plans.

Until 2004, an Environmental Statistics Subdivision operated within the Agricultural and Environmental Statistics Division of the State Department of Statistics. In 2004 the Department of Statistics was merged with the Ministry of Economic Development of Georgia and from this period until 11 December 2009 the Department of Statistics carried out the statistical activities as a subordinated body of the Ministry of Economic Development of Georgia. From 2009 statistical activities are carried out by an independent body of National Statistics Service of Georgia (Geostat), the Legal Entity of Public Law. It carries out its functions taking into account the international methodology and standards. Since 11 December 2009 the Law of Georgia on Official Statistics provides a legal basis for its functioning. Ministry of Environment and Natural Resources is responsible for submitting annual Statistical reports on water use, air emission from stationary sources to the Division of the Agricultural and Environmental Statistics, under the Geostat.

The State Department of Standardization, Metrology and Certification is responsible for the translation and introduction of ISO standards relating to the environment (ISO 14000 and ISO 9000). Once a year, the Department has to calibrate radiation detection and measurement instruments as well as environmental monitoring devices.

#### *Local Governing and Self-Governing Bodies*

Roles and responsibilities of regional government and local self-governing bodies and division of responsibilities among state, regional and local authorities are defined by the Organic Law of Georgia on Local self-Government, the Law on State Supervision of Local self-Governing Bodies and the Law of Georgia on Property of Self-Governing Bodies.

Structures of Self-governing Bodies. In accordance with the Organic law on Self-governing Bodies, each municipality has an elected self-government with representative (Sakrebulo or local council) and executive bodies (Gamgeoba or City Hall). Municipalities have their own properties, revenues, budget and administrative centers and, represent the independent legal entities of public law. The Sakrebulo is headed by the Chair and the Deputy Chair elected by the majority of Sakrebulo members. The chair appoints or dismisses the Gamgebeli (governor) of the municipality or the Mayor of self-governing city with consent of the majority of Sakrebulo. Deputy Gamgebelis/Mayors are appointed and dismissed by the Gamgebeli/Mayor. The Gamgeoba (City Hall) is composed of structural and territorial bodies. Heads of the structural and territorial units of the Gamgeoba are appointed or discharged from the office by the Gamgebeli/Mayor.

Sakrebulos have sectoral commissions and temporary working groups involved in addressing various sectoral issues.

Rights and Responsibilities of Self-Governing Bodies. The self-governing bodies entertain their own authorities as well as authorities delegated by the state government.

Within their own authorities local self-governing bodies: develop and approve local budgets and oversight/monitor their execution; introduce and cancel local taxes and fees within the limits set out by the legislation; adopt and implement local development programs; collect local fees; manage and dispose municipal property, including local municipal lands, forests and water resources; plan land uses, divide their territories by zones (planting, recreational, industrial, commercial and other special zones) and, demarcate and alter their borders; issue local construction permits and supervise these works; regulate local passenger transportation; plan and provide municipal services, including public transportation, local road construction and maintenance, municipal waste management, maintenance of sewerage systems, outdoor illumination, etc; plan spatial-territorial arrangements and define norms and rules for spatial-territorial planning; approve general plans of land use and building regulations; approve territorial arrangement and infrastructure development programs; ensure municipal fire fighting and disaster rescue activities, etc;

Within the delegated authorities, municipalities work in accordance with agreements between the state government and the municipality.

Local self-governing bodies have the right to establish joint public works units through merging of various executive units to provide public services to their municipalities. In addition, they can establish non-commercial associations and/unions and join similar international self-governing associations and/or unions. Authorities of self-government bodies do not extend to free industrial zones.

Sakrebulos are authorized to approve local budgets, local plans, set-up local rules, regulations, standards, fees and monitor their implementation, while Gamgeobas implement Sakrebulo decisions.

State Responsibility in relation to Self-Governing Bodies. The state in relation with the self-governing bodies is responsible: for adoption/amendment and supervision of implementation of laws related to self-governance; development and implementation of state programs in support of self-governance; fulfilment of State liabilities; setting of the minimum state social standards; implementation of equalizing state budget transfers to municipalities; compensation of additional expenses borne by the self-governing units as a result of decisions made by State bodies; ensuring of socio-economic

development of high mountainous regions and relevant allocations in the state budget for the given purpose.

Georgian parliament makes the decision on creation or abolishment of self-governing unit, based on the recommendations of the Government of Georgia.

Property of Self-governing Bodies. Self-governing bodies own: property handed over to local self-governing units; property handed over to them by the state; property generated or purchased by the self-governing units. In terms of natural resources, self-governing bodies have an ownership on lands both non-agriculture and agriculture of local importance, except for lands under private ownership, cattle pastures, agricultural lands within 500 meters of the border line, lands of protected areas, land plots for historical, cultural, natural and religious monuments; State forest fund lands; land transferred to the budgetary organizations and public legal entities, in the form of usufruct; land of water resources; agricultural lands subject to privatization according to the Law of Georgia on “Privatization of the State Owned Agricultural Land”. Forest and water resources of local importance are also under the property rights of the self-governing units.

Local Budgets. The budget of the self-governing body is a sum of receipts of local self-governing bodies as well as taxes to be paid for the implementation of functions and obligations and balance changes, approved by the representative body of the local self-government. It is independent from any other self-governing unit budget, as well as the State Budget of Georgia and budgets of Autonomous Republics. Budget revenues of self-governing unit consist of own and attracted revenues. Own revenues are local taxes, equalizing transfers and other receipts envisaged by the Georgian legislation for the self-governing unit, while attracted revenues include special and earmarked transfers and other receipts set by the Georgian legislation. Amount of local taxes is determined by the Sakrebulo taking into account rate limits set by Georgian legislation. Tax authorities provide tax exemption in the self-governing entity budget as determined by the rules set forth by Georgian legislation, while extraction of other funds of the self-governing unit, that are received through other revenues and operations conducted on non-financial assets – by the relevant self-governing entity departments, if not determined otherwise by the Georgian legislation. Decision made by supreme authorities of the Georgian government, also by the state administration of the Autonomous Republics of Abkhazia and Ajara, that increases the budget payment or reduces its revenues, shall be compensated by the body that made the decision. Self-governing unit within its authority can spend independently and at its own discretion the revenues received from any other sources except for the grants, special and earmarked transfers received in compliance with the Georgian legislation. The self-governing unit shall independently define the direction of expenditures and the programs to be financed for the execution of the exclusive and voluntary authorities under this law. The part of funds that shall not be spent within the fiscal year shall be used next year.

Control over the Activities of the Local Self-Government Bodies and Officials. Control over the activities of self-governing bodies includes state supervision, financial and internal control. State supervision is implemented by the Regional governor’s office in accordance with the Law on State Supervision. It aims at identifying legitimacy and expediency of the activities of local self-government bodies and local officials. The forms of State supervision are – legal supervision and supervision over implementation of delegated competencies. Legal Supervision is a type of State supervision which aims to provide compliance of normative acts of local self-government bodies and local officials with the Georgian legislation. Supervision over implementation of delegated competencies is expedience-motivated

supervision, which ensures the implementation of delegated competences of a local self-governing unit according to the interests of the State, and in conformity with the guidelines issued by the delegating body. State supervision is performed by the State Trustees – Regional Governors. In exceptional cases, the Government of Georgia can issue a Statement authorizing another body or official to exercise State supervision.

Financial control includes annual audits and financial inspections. Audits of financial documents are conducted by invited auditors on an annual basis, based on the request of the third of the Sakrebulo members. The report is submitted to the Sakrebulo as well as to the Chamber of Control of Georgia. Financial control is carried out by the Financial Commission of Sakrebulo after the utilization of funds, to determine their legitimacy, relevance and efficiency. Financial control can also be conducted by another body determined by the Georgian Law. Internal control includes supervision over the observance of the statute, internal regulations, instructions and other normative acts regulating the working process of the self-governing unit, officials and employees.

### ***2.5.2 NGO Sector***

In general, environmental NGO sector is well developed in Georgia. Many non-profit organizations have started their activities soon after the break-up of the Soviet Union and since then proved to be efficient and effective organizations. However, the majority of these organizations are concentrated in the capital and few major cities of Georgia.

A number of strong NGOs exist in the area of biodiversity conservation and sustainable use of natural resources. While the highest attention among various natural resources is paid to the biodiversity, including forests the lowest attention is paid to the land degradation issues. Very few NGOs understand integrated natural resources and watershed management concepts.

The most active NGOs with the largest networks throughout Georgia and advocacy, awareness and environmental governance activities are the Caucasus NGO Network (CENN), Greens Movement, Green Alternative, REC-Caucasus, etc. They focus on both environmental issues of local and global importance. Two NGOs CENN and REC-Caucasus also work on trans-boundary issues covering all three South Caucasus countries. CENN is very instrumental in working at the grass-roots level as well.

The strongest conservation NGOs are WWF-Caucasus, NACRES, IUCN Caucasus office and GCCW. They implement programs and projects across the country focusing on ecosystems, species and their habitats protection and sustainable use, both inside and outside protected areas. Only limited number of NGOs work on traditional and organic farming issues and the leader among them is Bio-farmers Association ELKANA. Care International, US-based international NGO being considered as relief-type and development NGO not having a major focus on environment works with local community mobilization and empowerment on various aspects including sustainable agriculture.

Very few NGOs work on climate mitigation and adaptation issues. Most of existing environmental NGOs focus on general awareness rising and outreach campaigns and at lesser extent on capacity development and knowledge transfer, since they lack technical expertise in climate mitigation and adaptation. The most active NGO in climate mitigation is Energy Efficiency Center working on energy efficiency and saving as well as on renewable energy issues. The largest NGO working on renewable energies and access to energy in rural areas and energy efficiency is Winrock International (WI), US-

based NGO working in partnership with a number of local NGOs including the Center for Sustainable Development and Policy (SDAP).

### ***2.5.3 Private Sector***

In line with the government reform to attract the private sector in managing natural resources, currently private companies play significant role in environmental and natural resource management, e.g. almost all utility services in urban areas are provided by the companies either through management concessions or through private ownership. Forest concessions for commercial logging are also given to private companies and recently tourism concessions have been introduced within the protected areas. Although, the private sector participation in the management of natural resources creates efficiency gains and extra revenues for the government, it is still debatable whether or not this results in sustainable resource management, since the issues of poor enforcement and low environmental conciseness' of the companies operating in Georgia are unaddressed.

The concept of Corporate Social responsibility (CSR) is very new for Georgian private sector, although the awareness among existing businesses has been gradually increasing. In general, "corporate social responsibility" is a widely adopted term among the global business community. It is a concept of integrating social and environmental concerns into the business operations of private companies on a voluntary basis. Other terms used as CSR synonyms are "corporate responsibility", "corporate citizenship" and "corporate sustainability". Companies may increase their reputation among various stakeholders not only by improving the quality of product, diversifying the goods and services they provide, suggesting the competitive prices and the sound sales management to customers but also by improving the brand value, demonstrating the goodwill and enhancing the reputational capital. In addition, they can receive significant gains, including efficiency gains by improving their corporate management via applying green practices (e.g. energy efficiency, recycling, reuse, use of renewable energy resources, etc) or suggesting new green products to the customers (e.g. energy efficient buildings and appliances, landscape architectural products, etc). Through doing so, the companies can attract new investments, since a growing number of investors and investment funds look for good company behavior. In addition, companies with good reputation are more attractive to a number of charities and development agencies. In the Georgian context, given the high priority by the population is given to social protection, social justice, poverty reduction, etc. companies that will voluntarily adopt practices for protection of vulnerable customers, will be transparent and more responsive towards customers' needs, will participate in various social projects for the benefit of the country and the local communities, etc. will definitely gain the high reputation among various strata of the society, including government, donor community, development and investment banks, overseas businesses and, the most importantly, among the general public that may lead to increased competitiveness, growth of investment portfolio and expansion of businesses of these companies. In many cases local companies that are engaged in extraction of natural resources or are involved in various industrial activities have the negative impact on the surrounding environment and impose nuisance to the communities. Therefore, the communities frequently have negative attitude towards these companies. Thus, it is of utmost importance to establish a good relationships with these communities either through participating in or funding various community projects or through creating local employment schemes for communities. For instance, in Akhmeta municipality, Kakheti region, where a number of small local companies cut forests illegally in the past, stopped their operations due to the strengthened law enforcement. Currently, several large-scale concessioners operate in the district that do not much care about the employment of locals. These companies could think of developing local businesses for

production of biomass fuel (e.g. pellets, briquettes, wood chips, etc.) and could engage local populations in collection of wood wastes and secondary materials. Furthermore, they could also think of supplying locals with wood wastes and secondary materials available within their territories for fuel wood.

In Georgia, a number of medium to large-size local or overseas companies operating in the country apply social and environmental criteria in their operations. But, still this is not a wide practice especially among small to medium size local businesses. Few concrete examples of companies' CSR are as follows: Procredit bank uses environmental criteria while assessing the loan portfolio and takes negative loan decision for the companies which are thought to be engaged in environmentally hazardous or harmful activities. In addition, the company is very cautious on money laundering, activities financing terrorist organizations, companies using child labor, etc. Georgian Bank offers student loans without collateral; Company Silknet has special package for socially vulnerable groups and offers 50% discount on a number of products and services. The Georgian Water and Power Company, for instance, has introduced the debt restructuring systems beneficial for the customers, etc. The TBC bank has established a sinking fund for IDPs. Furthermore, local companies are increasingly looking for ISO quality and environment management certification. For instance, such companies as Georgian Glass and Mineral Water Company, food producing company – Nikora, Aversi – pharmaceutical company, etc. are already ISO certified. Though, it should be mentioned that environmental consciousness of the vast majority of local companies is still much lower than the social consciousness.

There are a limited number of examples of private sector participation in environmental management in Georgia. For instance, company Wissol on a regular basis participates in environmental outreach campaigns; The Bank of Georgia has established a green account to fund the rehabilitation of burnt forests in Borjomi area as well as donated about USD 200,000 to the Caucasus Nature Fund (CNF) for rehabilitation of Borjomi-Kharagauli National Park; A number of local banks including TBC, Bank of Georgia, Republican Bank, VTB bank provide concessional and commercial loans to small to medium enterprises and individual consumers for industrial and municipal energy efficiency and small hydropower development. Bio-farmers Association Elkana in cooperation with the retail company Begeli markets bio products and traditional crops, etc. BP in partnership with Eurasia Foundation has annual environmental awards program for Georgian NGOs. It has recently provided over US\$ 3.5 million for reconstruction of Sataplia Cave for Protected Areas Agency of Georgia.

Regardless of above, potential for private sector participation in environmental management is high, but currently under-utilized. For instance, none of the projects are implemented in carbon financing, given the low awareness and capacities for implementation of CDM mechanism in Georgia. Furthermore, businesses could be more actively engaged in waste recycling and reuse and could use also local populations for collection of waste materials. In addition, as it was discussed above, forestry companies could establish biomass fuel production businesses and could engage local population for collection of raw material; Biomass products could be provided at preferential prices to local populations or alternatively the forestry companies could allow for locals to collect secondary wood materials available in their forest territories and/or wood wastes generated through their logging operations as an alternative to illegal wood cutting for fuel wood, etc.



## ***2.5.4 Academic and Research Institutions***

### ***Academic Institutions***

Several courses in colleges and universities include modules dealing with environmental aspects, e.g. bachelor degrees in geography, ecology, applied biosciences, and biotechnology, and master's degrees in physical geography, hydrology offered by Tbilisi State University. Bachelor degrees in life sciences, ecology, environment, and sustainable development, and master's degrees in environmental biotechnologies, ecological genetics, geo-ecology, natural disaster risk assessment, eco and agro-tourism management, and the biological resources of the Earth, Caucasus, and Georgia (in the context of sustainable development) are available at Ilia State University. Agrarian University offers bachelors to Master's degrees in forestry, land management, etc

### ***Research Institutes***

There are currently 62 research institutes in Georgia, some of which have an environmental profile and work actively in this field.

One of the main financial sources for research institutes are state budget grants, which are awarded on a competitive basis for the implementation of particular projects. Besides that, institutions are encouraged to compete for international research grants and to obtaining funding from any other potential funding sources such as industry etc.

Information on these research projects is available on the web site of the National Scientific Fund: <http://gnsf.ge>

## ***2.5.5 Donors and Development Agencies***

The most active donors and Development agencies in the area of environmental and natural resources management in Georgia are: EU Delegation financing water resources, protected areas, waste management and climate change projects through various mechanisms including TACIS, Twinning, European Neighborhood and other regional partnership instruments; UNDP working in almost all environmental areas at both national and local levels and implementing projects funded from the Global Environmental Facility; USAID-Caucasus having a vast energy portfolio including renewable energy and energy efficiency projects and environmental portfolio with a focus on watershed management, management of protected areas, disaster risk reduction, etc; German government having multi-million biodiversity conservation, protected areas and climate change projects implementing them through either GTZ or KfW. In addition, development banks including EBRD and ADB are very active in funding utility rehabilitation projects (For more details see part 2.6 below).

## **2.6 Projects and Programs**

### ***2.6.1 Projects in the Area of Natural Resource Management***

In the area of natural resources management, the largest on-going program in Georgia is GTZ implemented program: "Sustainable Management of Biodiversity in the South Caucasus" (See the list of on-going projects in annex 3). The project assists three countries to reform relevant legislation, build capacities of decision-makers and demonstrate sustainable management of natural resources in pilot areas through development of value chains. The project also promotes the cross-border dialogue and

technical exchange between the countries. The partners are invited to take part in a regional dialogue to learn about project measures, methods and results and to develop cross-border initiatives. WB has invested over USD 8 million to establish and develop protected areas system in Georgia. Currently, German government, UNDP-GEF, Caucasus Nature Fund (CNF), USDol, WWF, EU/FFI/NACRES, MAVAF foundation, Critical Ecosystem Partnership Fund (CEPF)<sup>4</sup>, IUCN and BP provide support to Protected Areas Agency in various aspects of protected areas management, including expansion of PAs and enhancement of their management effectiveness.

In the area of river basin management EU has a large regional project to Support Integrated Management of the Kura-Aras River Basin. With this program EU tries to create the basis in Georgia for integrated river basin as per EU Water Framework Directive. The major focus with this program is no water quality and ecological status of rivers. UNDP has recently launched implementation phase of GEF program on Reducing Trans-boundary Degradation of the Kura-Aras River Basin with which it will assist three riparian countries of the Kura-Aras River Basin with development and implementation of the regional Strategic Action Program and national Integrated Water Resources Management Plans.

The government of Georgia with its own resources, grants from US Millennium Challenge Corporation and loans from EBRD and ADB implements large-scale water supply rehabilitation projects in major cities of Georgia (For more details see the part 3.3.3)

In the field of forestry, KfW and Government of France are trying to demonstrate community forestry in one of the western regions of Georgia, BP funds rehabilitation of forests in one of the resort zones of Georgia (Bakhamro), German government and WWF work on forest rehabilitation in one arid areas of Georgia, UNDP through funding from Finish government works on rehabilitation the most damaged forest ecosystems in Borjomi areas. The REC Caucasus through EU financial assistance supports development of management policies and practices community (Temi) Forests in mountainous regions of Caucasus. It also aims at strengthening capacities of community organizations in the management of mountain forests.

Various donors including FAO and EU Commission support improvement of legal-regulatory and policy frameworks for forest management

USAID-Caucasus has recently launched a large-scale project: “Integrated Natural Resources Management in Watersheds of Georgia” that focuses on watershed management in Rioni and Alazani-lori River Basins of Georgia. The project will demonstrate practices and models for participatory integrated natural resources planning and management in selected watersheds of above basins.

### ***2.6.2 Projects in the Area of Wastes and Chemicals***

EU through the Twinning mechanism launched the support to the government to improve waste governance with a major focus on hazardous wastes. FAO implements the regional project on PoPs and pesticide management. The Dutch government focuses on municipal and medical waste management improvement. The largest investment projects in the area of waste and chemicals management are construction of landfills in Rustavi and Adjara region funded through EBRD and Sida.

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<sup>4</sup> joint initiative of Conservation International, the Global Environmental Facility, the Japanese government, the MacArthur Foundation and the World Bank

### ***2.6.3 Project in the Area of Climate Change***

In the area of climate change, EU, UNDP and UNEP work on improving enabling environment for implementation of UNFCCC and its Kyoto protocol in Georgia, GTZ works on rehabilitation of wind breaks in one of the arid areas of Georgia with a purpose of climate adaptation; USAID, UNDP, EBRD and the Governments of Japan and Czech Republic support development of renewable energies and improvement of energy efficiency. Recently, a concept paper on flood management in Rioni Basin has been approved by the Climate Adaptation Fund and if the full-pledged documentation is also approved by the Fund the country through UNDP will launch a large-scale project on improvement of food management in Georgia.

The Georgian government has joined the Copenhagen Accord and committed itself to develop Low Emission Development Strategy (LEDS) and National Adaptation Plan for Action. The Ministry of Environment is in the process of negotiation with USAID and UNDP to receive assistance in these endeavors.

### **3.0 SECTORAL LAWS, POLICIES AND INSTITUTIONS**

#### **3.1 Disaster Management**

This part of the document evaluates responsibilities and roles of National Government Institutions with respect to Disaster Risk Reduction and Emergency Management.

##### ***3.1.1 Existing legal-regulatory framework***

Organizational and institutional arrangements for natural and man-made disaster risk reduction and response in Georgia are governed by the following legal acts: 1. Law of Georgia on Emergency Situations - 17.10.1997 and its amendment #2169-II of 05.07.2003; 2. Martial Law of Georgia - 31.10.1997; 3. Law of Georgia on Protection of Population and Territories Against Natural and Manmade Emergency Situations - 08.06.2007 and its amendment of 31.07.2009; 4. Presidential Decree (#415) on National Response Plan for Natural and Manmade Emergency Situations - 26.08.2008. These laws define responsibilities of major national governmental institutions involved in all key activities that address hazard risk assessment, monitoring, information dissemination and response actions in Georgia.

In addition, all environmental laws, both framework and media-specific, contain provisions on disaster risk reduction measures and emergency situations. The Organic Law on Self-Governing Bodies lists responsibilities of local authorities with regard to emergency situations, emergency preparedness and response, etc.

##### ***3.1.2 Existing Policy and Planning Framework***

The National Response Plan for Natural and Manmade Emergency Situation is a comprehensive document that describes in detail the tasks of each involved agency primarily in case of a national emergency situation, as well as the responsibilities of regional and local operation teams. The plan defines ways to achieve overall coordination, relevant measures for disaster prevention and mitigation, evacuation strategy, victims' assistance and relief, liquidation of consequences, etc. In general, it defines 17 basic specific functions for a potential national-level emergency situation and assigns major and auxiliary roles to key government agencies for addressing those functions. The Plan also defines the role of the Governmental Commission for Emergency Situation Management, which in the case of a national-level emergency will act as chief coordination body. At the same time, the executive role for crisis prevention is mandated to the Interagency Crisis Prevention Operation Center, which will operate under the Emergency Management Department (EMD) of the Ministry of Internal Affairs. As stated above, however, this plan is mainly applicable in the case of national-scale emergency situations, when local and regional authorities are not capable of handling emergency situations by themselves, or their competencies are insufficient to address the scope of the disaster (devastating earthquakes, epidemic outbreaks, volcanic eruptions, etc.). In all other cases, coordination as well as crisis prevention and field operations are the sole responsibilities of the regional (or autonomous republics of Ajara and Abkhazia) and local self-governing authorities.

In addition to the above plan, the issues of DRR are integrated in the Basic Data and Directions for 2009-2012 and the NEAP considered as priority areas for the GoG for coming next 5-year period.

At the regional and municipal level, executive branches of regional and municipal authorities plan annual activities for prevention and mitigation of natural disaster, predominately, measures against floods and mudflows and river bank erosion. Planning of these activities is mostly based on the priorities received from local councils. However, due to the lack of finances only small part of activities are included in annual priorities and mostly those ones which are under immediate threat. Longer-term preventive measures mostly are not implemented.

### ***3.1.3 Institutional Framework***

In the area of Disaster Risk Reduction major institutions having various responsibilities for DRR are the Ministry of Environmental Protection and Natural Resources and its quasi-autonomous entity, namely the Environmental Protection Agency, Ministry of Internal Affairs, Ministry of Regional Development and Infrastructure and local municipal authorities. In addition, there is the National Security Council, which is the highest consultative and coordinating body in case of national level emergency situations.

#### ***Office of the National Security Council of Georgia***

The National Security Council is an advisory body subordinated to the President of Georgia. As stated in Article 5, Paragraph 2 of the Law of Georgia on Emergency Situations as well as in the Martial Law of Georgia, the Security Council is the main coordination body in case of national level emergency situations for any disaster prevention and response activities.

The Security Council currently coordinates activities to investigate legislative needs for crisis management in Georgia, as well as so-called threat analysis, or the risk knowledge assessment study - identifying natural hazards' sensitive areas, communities vulnerable to the hazards, and type and character of the risks. Although political 'weight' and influence of the Security Council is quite significant, it lacks institutional and human resources for actual implementation of functions assigned to it. Therefore its capacity as disaster risk reduction coordination body is currently rather limited. It is recommended therefore that before modernizing and institutionally strengthening take place, the Security Council should play a more supervising and controlling role in disaster management instead of executive or administrative roles.

#### ***Ministry of Environmental Protection and Natural Resources of Georgia (MEPNR)***

In the area of environmental security, the Ministry of Environment has the responsibility of to participating in the formulation of national policy and its implementation; organization of unified environmental monitoring system; development of recommendations on announcing environmental emergency situation and identifying zones for environmental disasters; implementation of measures against land erosion; compliance assurance monitoring and control. With the announced restructuring process, land protection issues will be moved to other Ministries. The Ministry through the Department of Environmental Policy and International Relations is a Focal Point for the Hyogo Protocol, international agreement for Disaster Risk Reduction. However, its role as a focal point is not clearly defined, except for reporting under this framework and participating in various international meetings. Having vast experience in reporting and assessment processes for different international secretariats and conventions, as well as closer relations with data producers and analytical think-tanks, the Department of Environmental Policy and International Relations might have good potential to increase its capacity to develop disaster risk knowledge studies.

The National Environmental Agency (NEA) - a legal entity of public law operating under the Ministry of Environment is responsible for assessment of hydro-meteorological, geodynamic, geological, geo-ecological situation in Georgia and dissemination of relevant information; setting-up and proper operations of hydro-meteorological and environmental quality monitoring networks; processing, analysis and dissemination of results of observations; development and operations of forecast and early warning systems; provision of actual and forecasted information, including information on natural and man-made environmental disasters to relevant authorities; identification of risk and high hazard zones in foreshores and coastal areas, development of recommendations on construction activities in foreshores and preparation of master plans, project proposals and preconstruction project design documents for coastal zone bank reinforcement; natural hazard and risk mapping; implementation of preventive measures against natural hazards; development of environmental database and meta-databases; in case of high environmental risks delivering of warning messages to proper audience in a timely manner. Until recently implementation of coastal zone and river bank reinforcement measures were also under the responsibility of the NEA. However, this function will be transferred to the Ministry of Regional Development and Infrastructure and local government.

#### *Emergency Management Department (EMD) of the Ministry of Internal Affairs*

From the above-mentioned institutions involved in the DRR, the EMD is probably the most organized, best-equipped and trained institution, having extensive experience in handling emergency situations caused by natural disasters or manmade catastrophes. By its mandate, The EMD coordinates implementation of national-wide emergency preparedness, prevention and response (rescue and recovery) activities. More specifically, it elaborates civil defense and emergency response plans for national-level disasters; in conjunction with other relevant government institutions and organization analyses and makes forecasts of disasters, leads implementation of emergency response measures; carries out emergency preparedness activities; makes pledges for international humanitarian assistance and coordinates its distribution. Thus, in case of a national-level emergency situation, the EMD acts both as an Interagency Operation Center for Crisis Management, as well as the Field Operation Center located directly in the crisis area, or in its vicinity. Its role in regional and/or local-scale disasters is limited by rescue operations,

The EMD's role as a major Early Warning System player is particularly significant for information dissemination and communication activities as well as for response capability. Therefore the EMD is listed as a key coordination and implementation body for most functions of the National Emergency Management Plan. The EMD has excellent training infrastructure and analytical capacity, as well as a perfectly arranged communication network with the data collection and knowledge base assessing agencies.

#### *Ministry of Regional Development and Infrastructure (MRDI)*

MRDI was established in January 2009 by special Governmental Decree on the basis of merging two units, existing State Minister's office for Regional Development and Infrastructure and Transport Administration Departments of the Ministry of Economic Development. According to the amendment dated 31.07.2009 to the Law of Georgia on Protection of Population and Territories against Natural and Manmade Emergency Situations, MRDI became responsible for coordination of any disaster risk reduction and prevention activities at regional and local levels.

The MRDI more actively participates in disaster risk management and reduction through the Road Department subordinated to the Ministry. More specifically, the department based on its charter participates in analysis of possible consequences of natural disasters, elaborates mitigation and preventive measures; coordinates natural disaster mitigation measures, jointly with the EMD of the Ministry of Internal Affairs and other relevant Ministries as well as jointly with local authorities elaborates relevant normative acts.

Since April 2009 the MRDI is working on a new legal document, on which basis the Ministry will establish Regional Service Centers of Disaster Management in each region of Georgia. The Ministry will hire and equip about 30 professional staff per Service Center that will be responsible for and unify three functional units: 1) data collection and processing, 2) risk assessment and contingency planning (about five staff members in each), and 3) disaster response and rescue operations (21 staff - seven rescuers per team of three shifts). The MRDI plans to provide intensive training with the help of the Ministry of Internal Affairs' Emergency Management Department for new recruiters. In addition, after establishment the Service Centers will be equipped with the latest available technology and necessary data and methodological tools. It appears from the above-mentioned that once MRDI's Regional Service Centers gains full capacity, they should be able to cover at least two out of four Key Elements of the Early Warning System scheme: Dissemination and Communication of the early warning information and have Response Capability in place to prevent/mitigate disasters, increase community preparedness, strengthen response capacity, increase public awareness and eliminate consequences of natural or manmade hazards at regional and local levels. However, it should be noted that this will be a costly and time consuming goal to achieve. Therefore, the government should think about alternative ways to fill the gap in the meantime.

#### *Regional Governors and Local Municipalities*

The role of the regional Governors has increased to the following responsibilities: issuing individual legal acts to ensure protection of population and territory against a given emergency situation; - coordinating activities of relevant institutions for prevention of consequences caused by emergency situation at relevant administrative-territorial units; providing use of regional emergency situation response forces in accordance to the National Response Plan of Georgia; coordinating evacuation of population in case of emergency situations ;coordinating activities to provide temporary, or stationary shelter to evacuated population; receiving and processing relevant information for protection of local population and territories against a given emergency situation; coordinating and supervising distribution of humanitarian aid; coordinating rescue and other urgent operations; coordinating secure functioning of vital regional institutions during an emergency situation; providing other relevant activities to prevent an emergency situation if possible and respond to the consequences in accordance with the Georgian legislation

Local municipalities are authorized to develop local environmental action plans, including measures for managing natural disasters. In fact, none of the municipality has such a plan.

#### ***3.1.4 Programs and Projects***

The most active local player implementing a number of projects at national and local levels in the area of DRR is NGO CENN (Caucasus Environmental NGO Network). At the local level, It through USAID financial support carries out climate change adaptation and disaster mitigation assessment and planning activities in Samtskhe-Javakheti, Ajara and Kakheti regions and Rioni and Alazani-Iori River Basin;

through EC funding implements local capacity development activities for prevention and mitigation of natural disasters and facilitates a dialogue for disaster risk reduction at community level; With SDC financial support carries out participatory DRR risk assessment, awareness and capacity building of local population and local authorities, supports policy dialogue, establishment of Disaster Management Strategy, etc. in Tsageri and Lentekhi districts; in partnership with REC Caucasus participates in Sustainable Land Management project and contributes to disaster risk reduction through demonstration of watershed integrated natural resource management in several pilot areas of Georgia. At the national level, in partnership with ITC CENN assists the Ministry of Environmental Protection and Natural Resources in enhancing its capacity for effective DRR. Activities are focused on institutional capacity building in disaster risk reduction via introduction of modern spatial approaches and technologies and the development of risk communication strategy in spatial planning in Georgia.

Among international development organizations UN agencies, including UNDP and UNICEF permanently support DRR-related activities in Georgia. Through UNDP endeavors a National platform for DRR has been established; a number of conferences and external events have been arranged to discuss implementation of the Hyogo Framework for Action 2005-2015 and to draft participatory risk management action plans; an interactive web portal on DRR has been established and; assistance to the Georgian National Committee for Disaster Risk Reduction provided. UNDP will continue provision of technical assistance and policy advice to the Georgian government for adoption of relevant policies in the priority areas identified in the Hyogo Framework. The overall objective is to make DRR a national, regional and local priority with an established, strong institutional basis for implementation. This initiative will be implemented in cooperation with the National Security Council, the Georgian Ministry of Interior, the Ministry of Regional Development and Infrastructure and the Ministry of Environmental Protection and Natural Resources. Furthermore, UNDP is planning to launch multi-million USD project to address climate risks through improving flood management in Rioni River basin.

**UNICEF** Within the framework of “Supporting Disaster Risk Reduction amongst Vulnerable Communities and Institutions in Southern Caucasus” Project funded by DIPECHO – Disaster Preparedness program under the European Commission Humanitarian Aid and Civil Protection Department, and implemented jointly by the Emergency Management Department (EMD) of the Ministry of Internal Affairs, the Ministry of Education and Science of Georgia, supports strengthening various aspects of school safety, including knowledge and skills of children, school-based disaster management and non-structural mitigation in selected number of schools.

**EU** has contributed over EURO 2 million to enhancing disaster preparedness and response capacities in most vulnerable regions of Georgia. Furthermore, disaster preparedness has now become a priority sector under the Eastern Partnership Flagship Initiative. In this context, EU has recently launched a new Program for the Prevention, Preparedness and Response to Natural and Man-Made Disasters to strengthen disaster management capacities at local, regional and national level through enhanced cooperation between the EU and its Eastern partners and among the partner countries, building on existing initiatives. The total budget of this program is € 6 million.

Oxfam and Red Cross have stand-alone DRR projects assisting local communities and institutions in disaster-prone regions (e.g. mountainous Ajara) in preparedness, mitigation and response to natural disasters.



Many projects working on rural development issues have DRR components. For example, Care International within its Rural Development project in Racha-Lechkhumi region in partnership with various organizations including CENN implements DRR activities in Ambrolauri and Oni municipalities; Mercy Corps under its on-going Market Alliances program among others focus on community resilience to disasters through improving ability of relevant stakeholders to identify, prevent and mitigate environmental risks related to agriculture, livestock and market development CENN supports Mercy Corps in the Samtskhe-Javakheti region in Disaster risk reduction (DRR) awareness and capacity building in natural disaster mitigation, response and recovery.

In the area of knowledge building and risk assessment Institute of Geophysics is a major research institution that works on seismic hazards and risk assessments. Currently, through NATO scientific partnership program studies seismic hazards and risks for South-Caucasus Northern-Turkey Energy corridors.

### **3.2 Agriculture Water Use, Food Security**

#### ***3.2.1 Legal-regulatory Framework***

##### *Land Reclamation: Irrigation-Drainage*

The law "On Declaring Void Georgian Law "On Melioration of Lands", effective from 17 December 2010 implied liquidation of existing irrigation and drainage associations by 4 February 2011. Meantime, the Ministry of Economy and Sustainable Development was tasked to make inventory of all assets of these associations and transfer their ownership to primary water users. In accordance with the Law of 17 December and the Law on Soil Protection of 1994, primary water users are defined as legal persons who have received through privatization process primary irrigation systems. In 2006, based on the Decree of the GoG the Department of Amelioration Systems owning the primary irrigation and drainage networks under the Ministry of Agriculture was abolished and based on this, four limited liability state-owned companies were established: SIONI-M, MTKVARI-M, ALAZANI-M, Kolkheti-M

Furthermore, in accordance with the law of 17 December 2010 the GNEWRC was tasked to set-up irrigation water supply tariffs for primary water use before 24 February 2011. Stemming from above, the commission based on its Decree of 1 February 2011 established following temporary fees: Sioni-M, Limited Liability Company — 75 GEL/ha/annum (irrigation); MTKVARI-M, LLC – GEL/ha/annum (irrigation); ALAZANI-M, LLC – 75 GEL/ha/annum (irrigation); and KOLKHETI-M, LLC – 45 GEL/ha/annum for irrigation and 40 GEL/ha/annum for drainage.

In accordance with the order of the Minister of Agriculture of 27 January 2011, two categories for land reclamation/amelioration services were defined: irrigation and drainage services. These services are provided by the primary water users (LLC companies) based on the fees set out by the GNEWRC.

##### *Food Safety*

Georgia adheres to food safety technical regulations of EU and its major trade partners, e.g. “new and global approach directives of EU”. The list of the trade partner countries is updated annually. Technical requirements do not cover traditional agriculture production and farm or household production. In addition to these documents, those state standards of CIS countries with which Georgia has international agreements are effective. In the transitional period, it is possible to have several

alternative technical regulations and the producer may choose one specific regulation out of these options. In addition to above, Georgia is a part of Codex Alimentarius. Food safety standards are being elaborated by its special commission uniting 168 countries. Georgia has translated and registered up to 245 standards in Georgia.

Georgia adopted the law on Food and Food-stuff Safety and Quality on 27 December 2005. It aims at protecting health, life and economic interest of consumers taking into consideration of effective functioning and diversity of local market. The law defines general principles and requirements for food and animal general requirements for food quality and marking of products, responsibilities of producers and retailers and sets food and animal safety and quality compliance assurance control and liability mechanisms, etc. It does not cover food production for personal or household consumption.

In accordance with the law, food and food-stuff producers and distributors should have all necessary documentation in line with food safety requirements. However, relevant state authorities can restrict/ban the sale of the product, if there is a justifiable doubt about the safety of the product.

All the food producers and retailers should be registered in accordance with existing rules.

Food samples for state control purposes are to be taken by the staff of the State Service for Food Safety, Veterinary and Plant Protection under the Ministry of Agriculture and should be submitted to the special testing laboratory for analysis. Costs for sampling and analysis are to be covered by the Food Safety Service and the results of the analysis are to be revealed to the producer/retailer immediately. If any of party does not agree with the results, cross-reference check of the food quality should be undertaken by the Service in different laboratory or internationally accredited laboratory. The costs of the reference check are to be covered by the party not agreeing with the results. If the party that does not agree with the first results is right then the other party should compensate costs to him/her.

There are two types of state control: food quality and food safety control. State control of food quality consists of testing of food samples and/or inspection of necessary documentation at retail points. Food safety control covers inspections, food sample testing, inspection of internal control systems and records of production facilities, etc. Food safety inspection should be conducted on a regular basis or in case of having the justifiable doubt. Regular inspections are done with prior notification to the producer or retailer, while unplanned inspections can be conducted without notifying the producer or retailer. The inspection can be done at any point of market chain: import, production, processing, storage, transportation, distribution and sale.

All the strict mechanisms for state control, including inspections law were to be effective of 31 December 2009. However, the effective date of these provisions has been extended to later years. Transitionally, state control of food safety can be done in exceptional cases and in case of a request of the producer.

Apart from the state control the Service for Food Safety is responsible for regular monitoring of food quality.

In addition to the Law on Food Safety there are a number of regulations important for this area, including the Order of the Minister of Agriculture #2-165 dated 19 October 2007 on Sanitary-Hygienic Requirements for supply and retail sale of unpacked products; the Order of the Health Minister #300/6 dated 19 October 2007 on Technical Requirements for Food Fortification and the order of the Minister

of Agriculture #2-113 dated 14 July 2008 on the list of permitted products during production of Bio-products.

### ***3.2.2 Policy and Planning Framework***

In accordance with the current setting, Land Reclamation Division of the Department for Agriculture Development under the Ministry of Agriculture has the responsibilities for development and control of implementation of Land reclamation policy. At present, there is no single agriculture policy document in Georgia, addressing Land Amelioration or Food Safety Issues. Land reclamation priorities: rehabilitation and proper operation and maintenance of irrigation systems are only listed in the Basic Data and Directions (BDD) of Georgia for 2009-2012.

### ***3.2.3 Institutional Framework***

#### ***Land Reclamation***

In the area of Land Reclamation the state policy is defined and its implementation is oversighted by the Ministry of Agriculture through Land Reclamation Division of the Department of Agriculture Development. In addition to state policy development and implementation the division participates in elaboration of relevant laws and regulations, identifies investment priorities in the sector and participates in elaboration of investment proposals, supervises and coordinates activities of melioration associations, facilitates establishment of united database on irrigation-drainage infrastructure, analysis of information on melioration in regions and development of relevant recommendations, development of soil quality thematic maps, development of policy recommendations on land consolidations, development of policy recommendations on sustainable land uses and coordination of their implementation.

The GNEWRC defines the methodology for irrigation water use fees and sets up relevant tariffs.

Limited Liability Companies under the State Ownership manage primary irrigation and drainage networks and provide land reclamation services to farmers either physical persons or juridical persons. There are upcoming plans for 100% privatization of State-owned Limited Liability Companies. The Lithuanian investor is interested to buy SIONI, ALAZANI and KOLKHETI companies. For MTKVARI system the government has no nearest privatization plans due to the coverage by the system South Ossetia conflict zone.

#### ***Food Quality and Safety***

In the area of food safety, veterinary service and plant protection the state policy is defined and implemented by the Ministry of Agriculture and its Food Safety, Veterinary and Plant Protection Service; Ministry of Labor Health and Social Security; Ministry of Economy and Sustainable Development; National Center for Accreditation and the National Agency for Standards, Technical Regulations and Metrology. More Specifically:

- The National Center for Accreditation is a legal entity of public law under the Ministry of Economy and Sustainable Development who defines and publishes the list of food testing laboratories;

- The National Agency for Standards, Technical Regulations and Metrology is a legal entity of public law under the supervision of the Ministry of Economy and Sustainable Development who develops and registers national standards and technical norms
- National Service for Food Safety, Veterinary and Plant Protection under the Ministry of Agriculture is a body subordinated to the Ministry of Agriculture responsible for state supervision, compliance assurance monitoring and control of food safety and quality, drinking water quality as well as control of compliance to sanitary-hygienic, veterinary and phyto-sanitary and veterinary norms; registration of food production facilities; risk management and communications; implementation of risk reduction (prevention and mitigation) measures; development of contingency plans, etc
- The Ministry of Agriculture participates in elaboration of development of relevant legislation and approves relevant regulations in the field of food safety; develops and coordinates implementation of the state food safety, veterinary and plant protection policy through its Risk Assessment and Food Safety Division; supervises works of the Food Safety, Veterinary and Plant Protection service; sets procedures for risk analysis and communications; supervises and controls infant food safety, etc.
- The Ministry of Labor, Health and Social Security is responsible for defining food safety parameters and technical norms; development of legal and legislative framework for infant food; food related disease monitoring and creation of related database; participation in management of crisis situations; information dissemination on healthy food and healthy nutrition.

### ***3.2.4 Programs and Projects***

#### ***Land Reclamation (Irrigation-Drainage)***

The largest project implemented so far in the land reclamation area is a staged WB-financed ***Irrigation and Drainage Community Development project***. The development objective of the initial project was to increase agricultural production and farm family incomes on about 110,000 ha by arresting further deterioration of irrigation and drainage infrastructure and keeping the operable infrastructure functional. Initially, the project was implemented by the Ministry of Agriculture. More specifically, the project aimed at improving the irrigation and drainage sub-sector and developing the institutional foundation for the long-term sustainability of the sub-sector for the benefit of increased crop production, and subsequent improvement in farm family incomes on an area of about 255,000 hectares (ha). The main focus for institutional development was on formation of Amelioration Associations (AAs) for the management, operation and maintenance of on-farm irrigation and drainage systems. During the first phase the focus was on rehabilitation of primary networks of Lower Alazani Irrigation scheme, Tashiskari Irrigation scheme and Kolkheti Drainage system. The total IDA allocated for the original project was USD 32.8 million, including preparatory funds.

In 2005 the project objectives were revised to add the second objective and the associated component in response to unusually heavy floods during the spring of 2005. The proposed new component aimed to reconstruct flood protection embankments, and irrigation headwork, and conveyance canals that had been destroyed or severely damaged by floods. The development objective of the proposed additional component was to improve and secure the sustainability of river flood protection works and irrigation headwork and canals, which, if unattended, could lead to increased flooding occurrences and infrastructure damage, and subsequent human life and economic losses. The second component was implemented by the Municipal Development Fund of Georgia. Additional financing: (i) enabled

strengthening of river embankments at critical locations along major rivers (including Rioni, Tskhenistskali, and tributaries of the Alazani); and (ii) provided for reconstruction or rehabilitation of irrigation headwork and conveyance systems. A list of priority locations was identified by government, but it was agreed that a flexible approach to selection of works to be carried out would be adopted, based on clear flood-related damage and further investigations during implementation. The IDA for implementation of additional components was USD 16.10 million that was increased later on by USD 6.06 million.

The government of Georgia has also provided state financing to MDF to rehabilitate Headwork and the dam on Dimi-Rokiti irrigation scheme in Bagdaati district in 2009.

In 2011, the USAID is planning to allocate USD 8.5 million for rehabilitation of trunk channels and secondary channels of Tirrophoni and Savtvisi Irrigation System in Shida Kartli. In addition, through joint efforts of the government and OSCE pumping station of Samtvisi will be rehabilitated.

#### Food Safety

**WB/IFAD Rural Development Project (2005-2011)** for Georgia aiming at developing the productivity and the profitability of the private agriculture sector has a component (3) that focused on legal and institutional reforms to enhance the competitiveness of Georgian agriculture and the safety and marketability of its products and enable Georgia to meet its international sanitary and phyto-sanitary obligations. More specifically, the project provided technical expertise to advise the management staff of the relevant departments on the revision of the food, plant variety protection and veterinary laws and also assist government legal staff in drafting pertinent laws and regulations. Training and study tours were provided, and operating manuals based on an EU compliant legislative framework developed. The project also enabled the Georgian government to establish a comprehensive, unitary food safety management and risk assessment system. The total cost of the project is USD 34.71 million, out of which the food safety component's cost is USD 4 million.

In 2010 through financial support of BP and the Austrian Ministry of Finance ***International finance Corporation (IFC) started implementation of the Georgian Food Safety Improvement Project.*** The project is designed to improve food safety practices among Georgian food manufacturers, build local food safety capacity, and harmonize national food safety legislation with EU requirements to boost the competitiveness of local food producers and increase food exports. The project will implement a pilot food safety management system with clients in order to build local consultants' capacity to manage food safety issues. IFC also aims to improve national food safety legislation and build the capacity of Georgian regulators in line with international best practice. The project is working with respective state agencies to introduce bylaws and amendments to the Law on Quality and Safety. We also train food safety inspectors in cooperation with the National Service for Food Safety, Veterinary and Plant Protection Agency.

#### *Good Agriculture and Watershed Management Practices*

In 2001-2008 Georgia implemented the WB-financed ***Agriculture Research, Extension and Training Program (ARET).*** The project had four components that aimed to reform the Georgian agricultural knowledge system through appropriate technology acquisition, adaptation and dissemination that would better respond to the new realities and needs of the emerging private farmers, while at the same time promote environmentally friendly agricultural practices to protect Georgia's surface and ground

water and reduce agricultural pollution to the Black Sea. These components were as follows: Component 1: Competitive Grant Scheme (US\$5.6 million – IDA Credit + GEF Grant) that supported (i) Adaptive Research and Technology Dissemination (IDA funding); and (ii) Environment-friendly Agricultural Practices (GEF funding) to reduce nutrient loads to the Black Sea from point and non-point agriculture pollution sources. The geographic focus was on the Khobi River watershed in Western Georgia. Component 2: Reform of the Agricultural Research System Credit supported pilot reforms in Horticulture and Viticulture through building capacities of the Institute of Viticulture, Horticulture and Oenology. Component 3: Pilot Environmental Pollution Control Program (GEF funding –US\$1.17 million)supported a pilot program in the Khobi River watershed to cover the following activities: (i) promotion of efficient manure management practices – installation of manure storage tanks/pits on a pilot basis; (ii)adaptive research, on-farm testing and demonstration of the use of biogas digesters in targeted villages; and (iii) establishment of a watershed scale water quality monitoring program to monitor agricultural pollution of major rivers draining into the Black Sea.

### **3.3 Potable Water**

#### ***3.3.1 Existing Legal-regulatory Framework***

Currently, issues related to the potable water are regulated by the laws on Public Health (2007), on Water and, on Mineral Resources as well as by a number of regulations. In accordance with the water law, during the allocation of water resources first priority is given to the water allocation for drinking and bathing purposes. Furthermore, the law requires setting of water sanitary zones for water bodies used for drinking water purposes. Rules for sanitary zones are further defined by the order of the Minister of Health and Social Protection on the Ambient Environmental Quality Standards (16 August 2001). The law on Mineral Deposits of Georgia requires licensing of ground water abstractions for drinking water supply (for more details see relevant parts on surface waters and mineral resources). The law no Public Health divides responsibilities among various Ministries with regard to water safety.

Drinking water quality standards and rules for drinking water quality monitoring are set out in «Technical Regulation on Drinking Water” approved by the order #349/N of Health Minister in 2007. More specifically, the regulation defines rules of self-monitoring to be conducted by water suppliers. It is based on Georgian Law on Public Health, WHO recommendations, EU directives, regional characteristics, including climate and relief conditions of the country. The document regulates the quality of natural and treated tap water as well as the quality of bottled water. It does not cover the quality of small water supply systems with a capacity of 10m<sup>3</sup>/ day serving less than 50 persons as well as natural mineral waters, where the mineralization exceeds 1,500 mg/l. The regulation sets requirements against common parameters of smell, taste, color and turbidity as well as against organoleptic, microbiological, intra-microbiological, epidemiological, chemical composition, including inorganic and organic substances (common pesticides and individual organic pesticides) and radioactive safety of potable water (See annex 4). Content of hazardous substances that occur in water supply sources as a result of economic activity should not exceed ambient water quality standards set out by the Ministry of Labor, Health and Social Affairs.

According to the “Technical Regulation of Drinking Water”, rules for state compliance assurance monitoring and control, including components to be checked, frequency of sampling and, sampling and analysis methods should be defined by the relevant law enforcement agency (currently by the Service of Food Safety, Plant Protection and Veterinary Service of the Ministry of Agriculture). Water quality

samples should be analyzed in accredited independent laboratory. In cases where the required standards are not met under the Technical Regulation, the supplier of drinking water is liable to carry out appropriate measures, including reporting to relevant authorities, identification of pollution reasons, restriction of water supply and, implementation of corrective measures for the safety of population.

Legal relations between the water supplier and the consumer are regulated by the “Rules on Drinking Water Supply and Consumption” adopted by the Georgian Energy and Water National Regulatory Commission dated 26 November 2008.

### ***3.3.2 Policy and Planning Framework***

There is no common strategy for water supply and sectoral policy development in Georgia. The Ministry for Regional Development and Infrastructure has adopted a regional development strategy that among others include rehabilitation of existing water supply, and sanitation systems and development of new ones in order to ensure access to safe water for everyone. It also includes improvement of management of the sector, including reduction of water losses, establishment of water metering systems and ensuring full cost-recovery of the system. In addition to above, development of storm water drainage systems is listed among priority directions.

The Organic Law on Local Self-Governance stipulates that water tariffs are set by local authorities, but there is no guidance for tariff-setting in terms of basic principles and objectives elaborated in the law.

In 2007 amendments were made to the Law on Energy and Gas that mandated Georgian National Energy Regulatory Commission (GNERC) to set-up water supply tariffs. Thus, the GNERC was transformed into the commission regulating water market in addition to energy market. It is now called as the Georgian National Energy and Water Supply Regulatory Commission (GNEWRC). One of the major functions of the GNEWRC is elaboration and adoption of a methodology for regulation of water tariffs to ensure effective tariff reform in the various cities and regions.

In August 2008, the GNEWRC adopted the methodology on water supply tariffs. In accordance with this regulation, the tariff calculation methodology is based on full cost-recovery principle of drinking water supply and sewage treatment as well as on full cost-recovery of environmental expenditures incurred. In addition, it takes into account profitability of water supply companies. Water tariffs can be adjusted to inflation rates and base tariff rates for electricity and water use fees. The methodology defines water supply tariffs for individual companies. Tariff reflects technical losses and norms for own consumption defined by the GNEWRC. More specifically, the tariff consists of water supply system capital, operational and maintenance costs and the reasonable profit, including future investment risks. However, it should also take into account the current social-economic conditions of the country and the affordability of consumers. Tariffs should be calculated by the companies themselves and submitted to the GNEWRC for approval. Costs should not include non-water supply related expenditures, excess losses, penalties, etc.

Water supply tariffs are not step-wise and are calculated based on 1 m<sup>3</sup> water supplied to individual consumers. Water base tariff rates can vary for different categories of consumers and they are adopted by the GNEWRC. The Commission, given the current low metering rate, can set up water supply tariffs per capita. There are no separate tariffs for wastewater treatment.

The metering of household water consumption in Georgia is still the exception rather than the rule. Water tariffs vary considerably among major cities. The tariff in Tbilisi is much lower than elsewhere, but this does not necessarily translate into a lower water bill for households, given that the latter is established on the basis of the water consumption norm (limit), which is much higher in Tbilisi as compared to that of other cities. In rural areas, water bills are either on a person per annum basis or household per annum basis.

Currently, tariffs are set out for all municipalities except for Poti and Tbilisi and vary per municipalities. Traditionally, local governments have set what are considered to be uniform socially acceptable tariffs without regard for the financial implications for the water companies. To some extent, the affordability problem is now being addressed by the Government's new targeted social assistance program.

### ***3.3.3 Institutional Framework***

Institutional setting in the water supply sector is as follows:

- The Ministry of Labor, Health and Social Protection sets out ambient water quality standards in accordance with WHO guide values.
- The Ministry of Agriculture carries out drinking water quality control.
- The Ministry of Environmental Protection and Natural Resources develops and coordinates implementation of state water resources management policies and protection of water objects from pollution and exhaustion.
- The Ministry of Economic Development until recently was responsible for licensing of ground water extraction which according to recent reorganization of the environmental sector will soon become the responsibility of the Ministry of Energy.
- The Ministry of Regional Development and Infrastructure is responsible for state planning a coordination of development of water supply systems throughout Georgia. Provision of water supply to Georgian population, except for populations of Tbilisi, Mtskheta, Rustavi and Autonomous Republic of Ajara is carried out by the State Company "The United Water Supply Company of Georgia", LLC owned by the Regional Development Ministry. It has regional branches and subordinated to these branches the service centers in all relevant regions.
- Georgian Water and Power" (GWP) is a leading company on the water supply market of Georgia. The company provides water supply services to the population of Tbilisi and its neighborhood, as well as to state organizations, industrial and commercial objects. The company delivers drinking water to Tbilisi and its neighborhood and provides wastewater services to the capital. Georgian Water and Power serves about 400 000 customers throughout the city. Out of which about 2000 are budget organizations, 15 000 commercial objects and the rest of them are residential customers.

### ***3.3.4 Programs and Projects***

Through the financial assistance of US Millennium Challenge Account water supply system rehabilitation works have been implemented or are on-going in many of large cities of Georgia. The plans are to cover all major cities through financing from ADB and EBRD. The city of Poti has large-scale water supply and sewerage system rehabilitation project under-going through financial assistance of KfW. The majority of



these projects envisage rehabilitation of only water supply systems and not sewerage systems (See annex 5).

### **3.4 Energy Sector**

#### ***3.4.1 Legal-regulatory Framework***

##### *Law on Electricity and Gas*

The Law on Electricity and Gas regulates the areas of electricity system operation, wholesale electricity (capacity) trade, electricity generation, transmission, dispatch, distribution, import, export and consumption as well as the areas of natural gas supply, import, export, transportation, distribution and consumption. It aims at promoting proper operations and development of electricity and natural gas sectors in Georgia, based on market economy principles. The law does not apply to exploration, production, processing and storage of natural gas, also to relations between the producer of natural gas and the supplier and to the electricity or the natural gas transit through the territory of Georgia.

There are no specific laws on renewable energies and energy efficiency effective in Georgia. There were attempts to adopt such laws, but without any success. Hydropower issues, including small hydropower are covered by the law on Electricity and Gas and, by the electricity market rules.

The Law on Electricity and Gas defines roles and responsibilities all relevant players in electricity and gas sectors and sets-up regulatory (licensing) and market-based mechanisms (tariffs) for the management of the sector.

The Ministry of Energy is responsible for formulation and implementation of state policy in electricity and Gas sector. It also issues regulations and participates in elaboration of laws; it approves energy and electricity balances; promotes development of renewable energies and energy efficiency and makes decisions on energy sector deregulation.

Georgian National Energy Regulatory Commission (GNERC) has an authority to grant, modify and revoke licenses for power generation, transmission, dispatch and distribution as well as for natural gas transportation and distribution and, to regulate activities of Licensees, Importers, Exporters, commercial system operator and suppliers within the Electricity and Natural Gas Sectors of Georgia. Later on, GNERC has been transformed into the GNEWRC (Georgian National Electricity and Water Regulatory Commission) to regulate energy and water sectors.

Georgian Wholesale Electricity Market (GWEM) is a Legal Entity of private law, created with a purpose of governing the wholesale electricity (capacity) trading activities and gradual development of competition within the electricity sector. It operates independently in compliance with Electricity (Capacity) Market Rules and other normative acts. Wholesale purchase and sale of all electricity (capacity) generated by any generation plant, which is a part of the Georgian energy system, purchase and sale of all electricity (capacity) imported to Georgia, also purchase and sale of services provided by the Transmission and Dispatch Licensees (except direct contracts) should be carried out through the Wholesale Power Market. In Georgia operation of only one Wholesale Power Market is allowed. The GWEM is a voluntary Union (Association) of electricity sector Licensees, Importers, Exporters and Direct Customers i.e. Members of the Wholesale Market.

Commercial Operator of Electricity Systems (Commercial system operator- CSO). Power trading is carried out either through direct contracts (agreements) or through the Commercial System Operator. CSO is a commercial legal entity of private law buying and selling balance electricity and reserve capacity in order to satisfy demand (actual and forecasted) of qualified enterprises. Direct Contract (Agreement) is a bilateral power purchase agreement between the wholesale buyer and seller of electricity defining prices, terms, conditions and quality parameters for electricity (capacity) purchase. Qualified Enterprise is a Power Generation and Distribution licensee, Direct Consumer, Importer, Exporter, CSO of the System and Hydro Power Plants, having the right to participate in wholesale electricity (capacity) trade. Parties of a direct agreement shall register the direct agreement with the Dispatch Licensee. Dispatch of Electricity is a technical operation of licensees and consumers in order to ensure stable supply and consumption regime and implementation of parallel regime operation of the Georgian electric system with the electric systems of the neighboring country (countries). Only one Dispatch Licensee shall be allowed in Georgia. The Direct Agreement comes into force only upon its registration by the Dispatch Licensee. The Dispatch Licensee has a right to deny registration of a direct agreement in certain cases.

While working on the implementation of direct power (capacity) supply agreements the CSO shall fill in the difference between contracted and actual volumes of electricity and capacity, also shall satisfy actual needs of buyers and sellers by means of balance electricity sold/purchased based on direct agreements.

Reserve Capacity. Distribution Licensees and Direct Customers are obliged to have required volume of reserve capacity and approved Balances. The Reserve Capacity is a capacity not used in wholesale electricity (capacity) trade, having the structure and value defined in the Electricity (Capacity) Market Rules and relevant dispatch availability and purchased by a qualified enterprise to satisfy its own demand; Reserve capacity should be provided through own power generation, direct contracts and system commercial operator. Purchased reserve capacity is constantly available for Dispatch Licensee and used to meet the requirements of qualified enterprises.

Electricity Import and Export. Electricity Import and Export may be done by any Person through direct contracts. While registering Electricity Import Agreements Dispatch Licensee is authorized to leave particular portion (reserve capacity) of Network Transmission Capacity unused in accordance with the system reliability requirements. In case transmission network capacity is not enough for import and export of the electricity, Transmission Network Owner Licensee through the auctioning process acquires right to Network Transmission capacity.

Electricity Balances. Dispatch Licensee develops Forecasted Electricity Balance which includes Power supply and consumption parameters by corresponding periods. Within the approved Electricity Balance daily and hourly planning of generation and supply sources is performed by the Dispatch Licensee. Parties of electricity (capacity) trading and transit shall provide the Wholesale Market with all information necessary for elaboration of the electricity (capacity) balances, etc. The Ministry approves electricity (capacity) balances based on the information received from the Wholesale Market and Dispatch Licensee and corrects these balances if necessary.

Licensing. Power generation, dispatch, transmission, distribution as well as natural gas transportation and supply are subject to licensing by the GNEWRC. The license is issued on a permanent basis. Off-grid power generation facilities producing the electricity for own consumption, are not subject to licensing.

Small Hydro Power Plants (SHPPs). In accordance with the Law SHPP is defined as a hydropower plant of small capacity and generation, insignificant for the total annual balance and refers to the SHPP with

capacity up to 13 MW. They can sell electricity to Qualified enterprises as well as to retail customers, representing a person receiving electricity (capacity) from the generation, transmission or distribution network and for own consumption only.

### *Regulations*

Electricity Sector. Power Market Rules issued by the Ministry of Energy and Rules for Power Delivery and Consumption issued by the GNEWRC are main regulatory documents governing the relationships between power generating, dispatching, and transmitting companies, as well as between distribution companies and consumers including direct consumers in electricity sector. These rules are as follows:

Initially, the permission to be involved in the wholesale electricity market should be acquired. This permission is awarded by the CSO. The Qualified Enterprise submits Wholesale Market Admission Application together with necessary supporting documentation to the CSO, who within one week after submission of application rejects or issues the permission. The CSO may cease the right to participate in the wholesale electricity trade by the Qualified Enterprise: if the Commission abolished its license, the Enterprise is in liquidation or if circumstances for awarding the permission to be involved in the trading change.

Power distribution companies and qualified companies (direct consumers) purchase electricity through agreements directly from power generators; The technical operator of the system - Georgian State Electric System (Dispatch Licensees) ensures the delivery of electricity to the buyer; Distribution companies and direct consumers, which purchase electricity through direct agreements, must ensure a 10% reserve of their estimated use ( 2010-2012 data); Generating companies, which do not have direct agreements with distribution companies or direct consumers, or have a surplus power without an agreement can sign an agreement with the CSO. If the system has demand for additional electricity, it will be given to the CSO. If distribution companies or direct consumers do not have direct agreements for electricity reserves, the reserve is provided to them by the CSO under standard terms. All power agreements must be registered with the technical system operator – Georgian State Electric System. The Qualified Enterprise and the Transmission Licensee are obliged to adjust their facilities to the Dispatcher's requests. Otherwise, the Qualified Enterprise independently decides the expediency and quality of loading of any facility. The Qualified Enterprise is authorized to disconnect its own facilities from the Central Dispatcher System, only if it is allowed by the regime, preliminary determined by the Dispatcher.

Market Rules applicable for Small Hydropower Plants. According to the Market Rules Article 36<sup>1</sup>), "if the power transferred by the hydro power plant to the delivery point (the point, where the Transmission and/or Generation Licensee, from the transmission and/or generation grid, supplies electricity and capacity to the Distribution Licensee, Direct Consumer and/or foreign electricity systems) is not totally or partially purchased through direct contracts, the small hydro plant is considered as a seller of this power to the commercial operator. Hence, the Commercial Operator is obliged to purchase unsold electricity from small hydropower plants at average weighted price of power bought by the commercial operator during the accounting period, not including the power price sold by the small hydro power plant through standard conditions". Accordingly, if the small hydro plant generated power and failed to put direct contract on power purchase with any qualified enterprise or retail consumer, or put direct contract on the delivery of agreed amount of power (capacity) with fixed tariff, but the plant generated power in excess, this excess in the second case and the total generated amount in the first case shall be

purchased by the commercial operator at average weighted price, calculated from all prices of generated power in the system during concrete month.

Regulations regarding the development of HPPs. The Government of Georgia developed the Rule, according to which, the person willing to construct the new source of renewable energy (by definition hydropower plant), is given possibility to sign the Memorandum of Understanding with the government of Georgia and the Commercial System Operator in advance. The list of the potential sources of the renewable energy (hydro plants to be constructed), comprising their location schemes and main technical parameters, is published by the Ministry of Energy on its web-site ([www.ministry of energy.gov.ge](http://www.ministryofenergy.gov.ge)) and publishes in press (The list is revised time to time).

According to the Regulation for construction, operation and possession of the hydro power plants compulsory requirements are as follows: within 10 years as from the starting of plant exploitation, during 3 months (October, November, and December) agreed by the Memorandum, all generated power shall be consumed by the internal market. Power selling is possible through two ways: through selling to any purchaser by deregulated price and through Commercial Operator, on the bases of bilateral preliminary agreement on compulsory purchase of power and with the preliminary set tariff.

The procurement of construction services is implemented to through bidding process.

Regulations governing Gas Sector. Market Rules is a major regulation in the gas sector. In addition, based on the Law on Electricity and Natural Gas, the Georgian Ministry of Energy issued an order, according to which the delivery of natural gas and related activities would be partially regulated. The import of natural gas in Georgia is free. The operator of gas pipelines in Georgia is Georgian Gas Transportation Company. As a licensed company authorized to transport gas it must ensure the delivery of natural gas to the destinations at regulated tariff rates. The refusal to transport gas is permitted only if dictated by technical conditions. Non-residential consumers can purchase natural gas from any provider. A licensed natural gas distribution company must allow the passage of natural gas from the provider to the consumer for a sufficient payment

### ***3.4.2 Policy and Planning framework***

The Ministry of Energy has elaborated "Main Directions of State Policy in Georgian Power Sector" in 2005 the Parliament of Georgia approved the document in 2006. The main goal of this policy document is the full satisfaction of the demand of industrial and domestic-communal sector on energy resources on the basis of full utilization of energy resources existing in the country and diversification of imported energy carriers. Furthermore, achievement of economic independence and sustainability of the sector, provision of energy security (technical, economic and political factors) are also very important objectives for Georgia's energy policy.

More specifically, major directions for the Georgia from 2005 through 2015 are as follows: 1. *Efficient utilization of power resources* through creating proper legal-regulatory and institutional frameworks and application of co-generation systems and renewable energies; 2. *Achievement of country's energy security* through re-equipping and rehabilitation of country's energy system, construction of new power generating units, predominantly hydropower facilities and utilization of other alternative sources of energy, extraction of local energy resources, and creating and maintaining of reserve capacity from 10% to 15% by the end of 2019, based on local resources; 3. *Admission of "the third party" to the electricity transmission and distribution networks*; 4. *Full metering of gas and electricity consumption in Georgia by*

2015, initially through communal metering and then individual metering of large cities followed by rural areas; 5. *Attraction of local and foreign investments and privatization*; 6. *Achievement of Economical sustainability of the sector* through liberalization and deregulation, development of competitiveness in the electricity and natural gas sectors and fostering market development; 7. *Setting proper Tariff policy* to foresee: a) seasonal tariffs; b) peak magnitude tariffs; c) step tariff (based on consumed volumes); d) long term, preliminary fixed (including marginal) tariffs; e) marginal tariffs. 2. Seasonal and peak magnitude (24-hour) tariffs and application of step tariffs and ultimately to reach a deregulation power generation tariffs; 8. *fostering bilateral and regional cooperation* through exchange of power with energy systems of neighbor countries, long term cooperation with technical operators of energy systems of neighbor countries for provision of export of excess electric energy and in case of necessity-for its import, harmonization of relevant legislation and its implementation for formation of electric energy regional market and, further development of energy transit corridor and provision of diversification of sources of supply of natural gas and electricity.

The document forecasts electricity consumption growth of 10% in 2015 compared with 7,791 million Kw/h consumption in 2005. As for the power generation, the document estimates 5,781 million kW/h power generation from hydropower and 958 million kW/h generation from thermal power in 2005 and forecasts power generation in the amount of 12,828 million Kw/h from hydropower, 1,968 million Kw/h from thermal power and 1,425 million Kw/h from wind power by 2015.

Regarding the implementation of above policy, the government is well-advanced in all aspects and directions, except for promotion of alternative sources, including small hydropower and other renewable sources of energy and energy efficiency through adopting relevant legal-regulatory framework. It is believed by the government that setting-up national-wide energy efficiency standards and their integration in building codes will hinder the economic development. However, given the commitment taken by Georgia under Copenhagen Accord and the commitment of the city of Tbilisi taken under the Mayors' Covenant to achieve 40% cut in GHG emissions by 2020, Georgia will have to deal with setting of some regulations to promote energy efficiency. Furthermore, it is also believed that creating favorable conditions for alternative sources of energy (subsidies, feed-in tariffs, etc) will distort the free market that the government is trying to establish.

### ***3.4.3 Institutional Framework***

#### ***Electric Power Sector***

Currently, the power sector of Georgia includes: Generation, Transmission, Dispatch and Distribution of electric power. All these activities are subject to licensing by GNEWRC.

Generation is divided into two groups according to the source of energy: Hydro Power Plants (HPPs) and Thermal Power Plant (TPPs). For system regulating plants fully regulated (fixed) tariffs are applied while for others partially regulated (marginal) tariffs. Small hydropower plants are fully deregulated and no fixed tariffs applied for them. In addition, power plants with more than 13 MW capacity built after August 1, 2008, must be licensed, but no tariffs are set for them; they determine electricity prices themselves (GNERC does only legal regulation);

Transmission of power is a service of transmitting power through 500/300/220 KV grids. There are two licensed transmission companies in Georgia – Georgian State Electric System and Sakrusenergo. Fixed tariff is established for the transmission of electricity (i.e. there is a full tariff)

Dispatching is done by one licensed company – Georgian State Electric System managing the dispatching in the system. A fixed tariff is established for dispatching services (i.e. there is a full tariff).

Telasi, Energopro Georgia and Kakheti Energy licensed companies are involved in the distribution and delivery of power to the end users: Telasi in Tbilisi, Kakheti company in Kakheti region and Energopro - elsewhere. A fixed tariff is established for the distribution of electricity (full tariff).

The commercial system operator (CSO) is in charge of the financial management of electricity not covered by direct agreements. According to Georgian law, the CSO, licensed generation and distribution companies, and low capacity power plants can participate in the wholesale market of electric power. In addition, qualified companies can participate in the power market, including importers, exporters, and those who fulfill their obligations to direct consumers as established by the law. Direct consumers have the right to purchase electricity on the basis of the agreement signed with providers.

The CSO grants direct consumers, electricity importers, and the exporters the right to participate in the wholesale electricity market. To obtain a permission to participate in the wholesale electricity market, the importer or the exporter of electricity must have an agreement, which serves as proof of ownership of electricity. The requirement for direct consumer is to have used a minimal volume of electric power (no less than 7 million KWh in 2010-2012 during the previous year). Full tariff is established for CSO services.

Quotas are not established for electricity import; however tariff is calculated according to the procedures developed by GNEWRC. There are no quotas or tariffs for exports of electricity.

#### *Natural Gas and Oil Sector*

In 1999, GNEWRC was granted the authority to manage the natural gas sector. Currently, the natural gas sector is divided into: Transportation; Delivery, and Distribution. Transportation of natural gas requires a license and is performed under full tariff regulation. Transportation of natural gas is done by one license holder Georgian Gas Transportation Company (GTC) subordinated to the Gas Oil and Georgian Corporation (GOGC), parastatal entity in charge of the implementation of policies in Gas and Oil Sector. Georgian Oil and Gas Corporation Ltd. was founded by the order of the ministry of Economy of Georgia, on March 2006 and entered state shares of joint-stock company "Georgian International Oil Corporation", "Georgian Gas International Corporation" and National Oil Company "Georgian Oil". Natural gas industry in Georgia is partially regulated: Licenses are not required for the delivery of natural gas; Natural gas delivery prices are not established for non-residential customers. However, GNEWRC regulates the relationships between suppliers and consumers, in particular, by establishing 'rules of market behavior', which govern the delivery and consumption of natural gas, as well as mediating disputes. Delivery of natural gas to residential consumers is regulated by tariffs and is viewed as an activity associated with the distribution of natural gas. Distribution of natural gas is subject to licensing and is fully regulated by a fixed tariff. Distribution includes passage of natural gas.

#### ***3.4.4 Programs and Projects***

Transmission Lines. Georgia through the assistance of EBRD, KFW, EU, European Investment Bank (EIB) and USAID implements a number of high-voltage transmission line construction projects, including projects for construction of 400 KV Electricity Transmission Line between Georgia and Armenia, 110 KV interconnection line with Turkey and, 500 KV Black Sea Transmission Line between Georgia and Turkey

and, the project for reconstruction of 220 kV twin chain power lines. The total investment cost is estimated at over USD 300 million.

HPP Development and Rehabilitation. EBRD, WB, EU and USAID support development and rehabilitation of a number of medium- to large-size HPPs. In addition, the government works with foreign investors to attract FDI for green-field projects. Within this framework, Enguri HPP is being rehabilitated. As a result of already implemented measures additional 520 MW capacity has been added to the grid and water to produce 700 mln KW/h output saved. Furthermore, the feasibility study on construction of about 750 MW regulating Hudoni HPP is under way. In addition, the country has signed a number of Memorandums of Understanding (MoUs) with private investors to develop HPP projects (See annex 6).

Development of small to medium-sized HPPs is supported by USAID-financed Hydropower Investment Program (HIPP) that will provide technical assistance to the government and project developers to attract local and foreign investments and add 400 MW capacity to the grid. The focus is on run-off river HPPs.

Energy Efficiency and Renewable Energy Projects. USAID, UNDP, BP, EBRD and a number of bilateral donors support technical assistance and demonstration projects in the areas of energy efficiency and renewable energies. Among them it is worth to mention USD 13 M USAID Rural Energy Project that focused on access to rural energy; USD 13 M joint UNDP-GEF and kFW Renewable Energy project focusing on small hydropower rehabilitation and geothermal resources; USD 30 M EBRD loan program for energy efficiency and renewable energy; USAID-financed “New Applied Technology efficiency and Lighting Initiative” (NATELI) helping large energy consumers (hospitals and condominium associations) to implement energy efficient measures and decrease their energy bills and, teaching people about renewable energy and energy efficiency. In addition, Japanese government and Czech development agency provide assistance to Georgia to install photo-voltaic batteries on a number of administrative buildings.

Hydrocarbon projects. A number of medium to large-scale infrastructure projects have been implemented or are underway in the Gas and Oil sector since Georgia’s inclusion in regional energy transit projects. Three mega-projects implemented are as follows: Baku-Supsa Early Oil Pipeline, Baku-Tbilisi-Ceyhan Main Export Pipeline and, Baku-Tbilisi-Erzrum Trans-Caucasus Gas Pipelines. In 2005, Georgia started the rehabilitation of North-South Gas pipeline, transporting natural gas from Russia to Armenia through Georgia. Funding is provided from US-financed Millennium Challenge Corporation. Through the government funding and funding from USAID the country has initiated a number of local gas pipeline construction and/or rehabilitation works, including the rehabilitation of the Tsiteli Khidi-Tsalka-Alastani 300 mm gas main pipeline (government funding), construction of the Saguramo-TsiteliKhidi gas pipeline (government and USAID funding) and construction of the Senaki-Poti sector gas main pipeline aiming to support in development of the Poti Free Industrial Zone (government and USAID support). In 2010, preconstruction design works started for an underground gas storage facility that is carried out by the Danish company “Ramboli Oil and Gas” through USD 3.4 million funding from MCG.

Capacity Development Initiatives. Since the establishment of the Georgian International Oil Corporation (GIOG) in 1995 to represent the government of Georgia in intergovernmental negotiations and coordinate implementation of oil transit projects, a number of capacity development and technical assistance initiatives have been implemented in the energy sector. UNDP and WB have supported the GIOG to build its capacity for environmental and technical monitoring of construction and operations of

the Baku-Tbilisi-Ceyhan construction. Capacity development assistance has also been provided by UNDP to the Georgian Gas and Oil Corporation from 2007 through 2010, as a result of which GOGC's certain technical and managerial capacities have been strengthened.

Currently, USAID through its separate capacity initiatives and multi-component investment and technical assistance projects provides capacity development support to the energy sector. More specifically, through the Energy Capacity Initiative it supports: energy policy analysis and dialogue; increase in local technical expertise; and, integration of Georgia into European and regional energy institutions; through the Regulatory Partnership Program it supports exchange of knowledge and expertise between US and Georgian energy regulators and; through multi-component Power and Gas Infrastructure Program (PGI) it supports capacity development in strategic energy sector modeling and technical engineering to provide proper services to on-going power and gas infrastructure projects.



## 4.0 ANALYSIS OF EXISTING LEGAL, POLICY AND INSTITUTIONAL FRAMEWORK IN TERMS OF INTEGRATED NATURAL RESOURCES AND WATERSHED MANAGEMENT

### 4.1 Gap Analysis

In general, existing legal-regulatory, policy and institutional frameworks do not support integrated natural resources management within natural boundaries of ecosystems/watersheds. Current practices for natural resources management are mostly based on sectoral approaches and do not take into consideration the holistic ecosystem approaches.

With respect to existing legislation, the *framework law on environmental protection* does not contain INRM and river basin/watershed management principles and does not require planning and management of natural resources based on these principles. There are very few examples in environmental media-specific laws that call for simultaneous management of several natural resources. For example, the water law requires setting-up water protection zones where use of land and forest resources is restricted. Similarly, in water sanitary zones different restrictive regimes for human activities are applied aimed at protecting drinking water sources from adverse impacts. In the law on mineral deposits, extraction of inert materials is prohibited from river riparian areas or beds of the rivers with unstable banks and low sedimentation, etc. In the law on protected areas, different protection regimes for existing ecosystems are applied within various categories of PAs.

*The law on environmental impact permits* requires issuance of integrated permits on a number of new activities, major modifications and facilities put into operation before 1999 and listed in the law. Applications for construction and environmental impact permits are also subject to state ecological expertise, which is carried out by the Ministry of Environment in agreement with all relevant Ministries and based on the conclusions and recommendations of experts' advisory commissions. This law itself has many drawbacks, containing incomplete list of activities that are subject to environmental permitting. For example, construction of water supply and irrigation systems is not subject to environmental impact permitting, while the construction of 2 MW small hydropower plant that might not have serious impacts on the environment, especially if it is river run-off plant, is subject to permitting.<sup>5</sup> Furthermore, mining operations, including mining of heavy metals and oil and gas extraction are not subject to environmental impact assessments and environmental impact permitting<sup>6</sup>. There are also drawbacks in provisions related to compliance assurance monitoring and control (law enforcement). According to the law, this function is carried out by environmental inspectors. However, they cannot conduct regular planned inspections of permit holder facilities and can only carry out spot checks or one-time inspections based on complaints. Moreover, the inspectors cannot enter facilities not subject to environmental impact permitting unless there is justified doubt (complaint supported by some proof/evidence) about the violation of laws. The Environmental Inspectorate, realizing these bottlenecks, has developed its strategy, which mandates the inspectors to conduct regular compliance assurance monitoring and control of all permit-holder facilities starting from 2010. It is arguable, however, whether or not the strategic document supersedes the law. It is evident that the law needs amendment to reflect the authority of environmental inspectorate to conduct regular inspections of facilities.

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<sup>5</sup> Water supply systems are only subject to water abstraction licences if they use ground waters as drinking water source and technical norms (so-called technical regulation) if they use surface waters as drinking water source; Irrigation systems are also subject to technical regulation for surface water use.

<sup>6</sup>Only processing of ore and oil and gas are subject to environmental impact assessment and permitting

Most important, activities subject to environmental impact assessment (EIA) can be waived from this requirement if the activity is of high state importance. The status of the activity to fall under this category is defined by the Minister of Environment on the basis of recommendations from the expert advisory council. However, there is no common definition what is meant by “high state importance”. In this regard, any activity subject to EIA can be waived and there is a danger that the powerful Ministries and lobbyists will have an influence on the decision of the Ministry of Environmental Protection and Natural Resources.

*Normative documents related to regulation of activities not subject to environmental impact assessment and permitting, but subject to technical regulation, need also improvement.* Specifically, in case of regulation of effluent discharges into surface waters, peculiarities of individual facilities are not taken into consideration while defining maximum allowable concentrations of various pollutants in wastewater. Overall, effluent limits are more stringent for facilities not requiring environmental permits than for those requiring permits (for which dilution capacity of the receiving water is taken into consideration). In addition, regulations on water abstractions have to be revised to set-up clearer and more precise terms and conditions for water users. Furthermore, the methodology for calculation of ecological flow of the rivers has to be elaborated and approved.

*The Law on Environmental Licenses and Permissions* of 2005 has also drawbacks sizably limiting the number of natural resources uses subject to licensing. For instance, it does not require licenses for various uses of forests except for timber production and establishment of hunting farms. Establishment of forest plantations, use of forests for agriculture purposes, recreation, etc. are not regulated at all.

With regard to planning of natural resources, although the Law on Environmental Protection calls for development of local environmental action plans it does not specify the scope of these plans and the methodology, hence it is not clear whether or not inter-linkages between the use of different resources and their impacts on ecosystems are to be taken into consideration. In addition, responsibilities of government entities with regard to local environmental planning are not defined in Georgian legislation, including environmental laws and the law on local self-governance. Furthermore, none of the environmental laws contain obligations on planning of natural resources at river basin/watershed level, except for the Law on Water. In particular, the water law requires development of so-called water balances (water budgets) for individual river basins, which should be the basis for planning water uses, including water allocations. Furthermore, multi-purpose water use and protection schemes/plans are to be created at national, river basin and administrative unit levels. These plans should meet the needs for drinking and bathing water supply, should regulate the water flow, and ensure efficient water use and effective water treatment or water pollution prevention. These integrated plans should be developed by scientific-research institutions through cooperation of various line Ministries and agencies and should be approved by the Ministry of Environmental Protection and Natural Resources. Rules for Development of multi-purpose plans should be elaborated and approved jointly by the Ministries of Environment and Economic Development. Unfortunately, there are no rules, procedures and methodologies for integrated water resources and river basin planning adopted in the country at present. The institutional mechanism contained in the law is very vague and does not take into consideration participation in the river basin planning process of local branches of all line Ministries involved in water-related activities as well as local municipalities.

*The draft law on Water* is more advanced in issues of integrated water resources and river basin planning. More specifically, it requires development of an Integrated Water Resources Plan (IWRMP) for

Georgia by the inter-agency state commission as well as development of river basin plans by the responsible agency in consultation with river basin advisory councils. Thus, the law takes into consideration integrated water resources management principles and the basin-wide approach for water resources planning. The river basin plans themselves are to be based on EU requirements that mostly look at water quality and not on water quantity, including water allocations. In addition, they do not take into consideration use of natural resources associated with water resources of the basin, e.g. land resources, forests and biodiversity, except for aquatic flora and fauna. The draft law is not specific in terms of setting the rules and the methodology as well as defining the geographic scope of basin planning units. Therefore, it requires development of sub-laws/regulations in this regard. Furthermore, it does not speak at all on implementation of river basin plans and responsibilities of central and local-level authorities with this regard.

The current situation with regard to environmental policy and planning is that only a draft National Environmental Action Plan and a number of media-specific plans, not taking into consideration linkages with other resources are elaborated. At the pilot level, various donors support development of INRMPs in a number of watersheds. However, these activities are not coordinated with each other and use different methodologies. There is very little chance to make these activities as a regular national-wide practice. The promising thing is that the government considers development of integrated river basin plans in a number of pilot river basins and adoption of a new law on Water as a priority action for upcoming 5-year period that might be a window of opportunity to apply these principles as a regular national-wide practice.

Until recently, no studies existed in Georgia assessing the economic value of goods and services that the Georgian ecosystems provide. Currently, general studies are being conducted for the entire PAS system under the UNDP-GEF PAS project and more detailed studies – for Tusheti, Mtirala and Borjomi-Kharagauli protected areas by efforts of the same UNDP-GEF PAS project and the WWF Caucasus. It is necessary to conduct economic valuation of all major ecosystems within and outside PAS.

With respect to institutional setting, at the national level until recently the majority environmental management functions were concentrated within the Ministry of Environmental Protection and Natural Resources. Only such functions as auctioning the use of natural resources, issuing the resource use licenses and, controlling the drinking water and food quality were carried out by the Ministries of Economy and Sustainable Development and Agriculture respectively. On the one hand, such concentration of environmental management functions within one institution guaranteed more effective integration of various environmental sectors. On the other hand, the Ministry was not able to deal effectively with a large array of responsibilities. On-going reorganization process of the Ministry will definitely release the agency from many difficult functions and it can be argued that it will become a more effective and mobile structure. However, there is a high risk that with a dissemination of various functions of the Ministry to a number of other Ministries the environmental planning and management process will further disintegrate and the sector-based environmental management approach will dominate over the integrated management approach. Furthermore, transfer of functions for regulation of natural resource uses to the major consumer Ministries might result in further depletion of these resources, since the conflict between the use and the protection of the resource will be at large resolved in favor of the resource use. Finally, with the current institutional reform, the organizational setting of the state system for environmental management will turn into extremely centralized system without having any local units in the regions. Regional offices of the Ministry of Environment have been recently abolished. This of course, will complicate the work of the central units of the Ministry of Environment

with regard to inventories of water uses and wastewater discharges and, pollution sources and air emissions, etc. In addition, central Ministries cooperation with regional and municipal authorities will be weakened that will reduce the chances for integration of environmental considerations into regional and local planning and budgeting. Similarly, implementation of provisions of the new water law, related to river basin planning will be complicated, since there will be no one on the ground from the Environmental Ministry to coordinate the river basin planning process and oversee its implementation.

With regard to environmental monitoring and development of natural resources cadastres, existing environmental quality and quantity data are very limited due to a significantly diminished monitoring network, lack of equipment and qualified staff. For some environmental media and resources they do not exist at all. For example, while there is a limited amount of current data on surface water quantity and quality, such data do not exist at all for ground waters. There are practically no data on soil quality. In addition, recent forest inventory data exist only for smaller forested areas. There is also no unified monitoring system for biodiversity.

Current Water accounting system is that water users are obliged to report their monthly water abstractions and wastewater discharges, with indication of effluent amounts to the Water Resources Protection Division of the Ministry of Environment of Georgia. In fact, there is no system on site to assure the quality and precision of data, since environmental inspectors do not check water use and discharge records. Moreover, not all the water users submit their water use data to the Ministry and there is no system in place to enforce submissions of these reports. The quality and the completeness of reports vary significantly among water users, given the poor knowledge on how to fill in the data and what parameters to report on. The absolute majority of reports lack or contain incorrect information on effluent concentrations, given the absence of effluent measurement or knowledge on calculation of effluents based on production parameters. The reports are submitted to the Ministry as hard copies and then these data are inputted to the water accounting database by the Ministry staff. Only one person from the Ministry of Environment is in charge of data entry and given significant volume of data, human error is not a rare phenomena. Furthermore, exact geographic coordinates of water intakes are not indicated that makes it impossible to create georeferenced databases on water uses. Until recently, regional offices of the Ministry of Environment were engaged in collecting the primary data from water users. However, after the dissolution of regional units of the Ministry, there will be practically no one in regions in charge of collecting primary data.

Water budgets are not calculated for any of river basins that hinder sustainable allocation of water resources to different sectors.

Environmental compliance assurance monitoring and control, which is carried out by the Environmental Inspectorate well as by Forest and PAs rangers is very weak at present, due to a number of legal restrictions for inspectors to fully implement their functions, including regular inspections of industrial facilities as well as due to lack of human resources, finances, skills and necessary equipment. For instance, one ranger in state forests and PAs is responsible for monitoring and controlling very large areas<sup>7</sup> that makes it almost impossible for the rangers to cover the entire territory under their responsibility. In addition, salaries of rangers are set at the level that does not give a motivation to them to perform their duties well and not enter into corruptive agreements with the poachers. The government is currently working on the optimization of the structure for environmental inspectorate.

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<sup>7</sup> For instance, one forest ranger is responsible for about 4,000-5,000 ha forest.

Yet, it is not clear what will be the suggested scheme and whether or not it will result in more effective and efficient system.

There are also many gaps in current systems and practices for managing individual natural resources – components of watershed systems. Their degradation ultimately leads to diminishing of ecosystem services and functions provided by watersheds. These refer to water, biodiversity, forest and land resources. For instance, in case of management of biodiversity within protected areas, many Priority Conservation Areas identified under the Eco-regional Conservation Plan (ECP) for the Caucasus are partially covered or absent from Georgia's protected areas. Existing protected areas are not fully representative of important ecosystems and/or species, e.g. in many cases sub-alpine and alpine meadows are not included in the mountainous PAS due to their importance for pasture grazing. Furthermore, due to the high human population density and improper PAs planning a number of PAs are located in agricultural areas or near rural settlements that creates a tension between local population and park administrations and as well, does not support long-term conservation goals. In most cases linkages among various PAs are not taken into consideration and thus, ecological corridors between them are absent not allowing migration of wide-ranging species during man-made and natural disasters or to avoid impacts of climate change and human development<sup>8</sup>. This is a result of poor planning as well as absence of the system of spatial planning in Georgia and comprehensive land cadastre system in order to avoid conflicts over land uses among local and central authorities and among sectors. Due to these very reasons, protected landscapes and multiple use areas are practically absent in Georgia. Buffer zones are virtually non-existent or poorly managed by local authorities, as a result of which unsustainable resource use and human pressures impact protected areas. Currently, the highest attention is paid to the development of PAs infrastructure to attract tourists and conservation objectives are paid lesser attention to. The PAs are managed in very centralized way not allowing individual PAs to govern their areas themselves in terms of financial resource planning and management. Finally, funding for PAs is insufficient on the one hand and the resources are not managed cost-effectively on the other hand.

More adverse situation exists in forest management sector. Existing governance system fails to protect forests from illegal cutting as well as to ensure sustainable management, including use and protection of its resources. In particular, this refers to forests of local importance (Local Forest Fund), which are to be managed by local authorities according to the existing Forest Code and the Organic Law on Local Self-Government. These forests are former "Collective Farm" forests located in or nearby villages or around cities. Wind Breaks built during Soviet times also belonged to the Collective Farm forests. According to official statistics, in 2002 the total area of former collective farm forests was about 531,451 ha in 58 districts. Based on presidential decree (2000) intending to delegate management of 324,121 ha of these forest to the state agencies (Forestry and Protected Areas Departments) and the rest to the local authorities, in 2002 only 74,128 ha were transferred to the state in 7 districts. In 2009, 90,000 ha<sup>9</sup> were transferred to local authorities. However, this happened only on paper. Local forests were supposed to be delineated from State Forest Fund and registered in Public Registry as a property of the local authorities that has never happened. Thus, the status of these forest is still unclear and currently there is no single authority to maintain and restore these forests. The use of these forest is not regulated as well and the law enforcement authorities control only the forests of State Forest Fund. a. As a result,

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<sup>8</sup> Ecological corridors have not yet been established, though there are two planning documents for Alazani Floodplain Multiple Use Area and the David-Gareji Protected Landscape.

<sup>9</sup> excluding 77,000 ha in Abkhazia and 4,000 ha in South Ossetia break-away regions

local forests, including wind breaks are intensively cut that leads to soil erosion, water reduction, landslides, etc.

Forest use activities, other than timber production and hunting farming are not covered by existing forest code. Although current regulations require tickets and contracts for the forestry activities other than those subject to licenses, the procedures for getting these documents were not adopted until recently. Therefore, since 2005 none of the legal documents has been issued for forest uses not requiring licenses. The forest code does not grant any right to local communities to cut forests for firewood. Therefore, the special regulation has been adopted to allow local communities to meet their heating needs. However, the legal procedure until recently was very complicated mandating rangers to arrange cutting for villagers and villagers to get certificate. Due to this procedure, frequently rangers failed to perform their duties and thus, villagers illegally cut the wood. Even more complicated procedure existed for getting permission for timber production.

Until recently, there were no regulations related to the use of secondary wood materials by local communities for meeting their domestic needs (e.g. house repairs, fence fixing, etc), but if a farmer cut some timber in local forest for non-commercial needs, the State Environmental Inspectorate would qualify this act as illegal cutting of material timber, liable to a corresponding penalty. Hence, local communities had no access to forest resources due to the imperfect regulations. With recent restructuring of the environmental management system, since 1 July 2011 rules and procedures for cutting forests for fire wood and other domestic needs as well as for collecting non-timber resources will be simplified and communities would be able to freely access the forests and use timber and non-timber resources for domestic needs, if they pay special fees for this. Furthermore, the rule of having the limit for fire wood to be harvested will be abolished and communities will be able to cut wood in the amount to fully meet their needs. However, trading with this fire wood won't be allowed.

In addition to the gaps discussed above, until recently, local communities from one municipality could not cut forests for firewood from another municipality and thus, those communities that did not have forested areas will be deprived of firewood. Starting on July 2011, this rule will be also abolished.

Regarding the sectors having significant impacts on natural resources, they are not managed in a sustainable way. More specifically, *in the area of agriculture*, issues of irrigation water efficiency, good agricultural practices and food safety are paid little or no attention. For example, there is no single law or policy promoting advanced irrigation technologies and stimulating power and water efficiency. Most of the existing irrigation-drainage systems are not gravitation-based and require pumping. Losses in the systems are high. It is unclear whether or not the current fee for irrigation water use (GEF 75/ha) guarantees proper operations and maintenance of the systems, as well as their development. Furthermore, there are no economic mechanisms or subsidies for introduction of state-of-the arts technologies (e.g. drip irrigation systems). Recently, the government announced its political will to introduce such technologies in Georgia. Yet the exact plans in this regard are not clear. The current institutional setting for the irrigation-drainage sector is also very poor. Existing state-owned companies cannot ensure proper operations and maintenance of the systems as well as collection of fees from farmers. Hence, the privatization of these systems can improve the management. However, given the poverty level in Georgia and the ability of local farmers to pay water use fees it might be still very difficult to have high percentage rate for collection of fees from farmers.

*A similar situation holds for proper land use and agriculture practices.* There are no incentives in the country for introduction of such practices. In addition, farmers' knowledge is still very low on these issues. Although one of the major objectives of Georgian laws "On Soil Protection" and "On the Conservation of Soils and Improvement of Their Fertility" is to set prohibitions and prevent over-grazing in high mountainous areas banning the grazing above specific altitudes, allowing only vertical grazing below these altitudes and requiring rotation of pasturelands, in practice, there are no specific regulations setting exact implementation, including enforcement mechanisms for these laws, e.g. norms of pressures on pasturelands, migration routes of domestic cattle, etc.

*Regarding food safety,* although there is a law regulating this sector, the Food Safety Service responsible for monitoring and control of the food safety and the quality currently is limited only with irregular monitoring of food quality. It cannot conduct scheduled inspections of food production facilities and retail points unless there is justified doubt on the quality and safety of the products.

*As for the potable water supply sector,* although the situation has significantly improved since the Rose Revolution in terms of access to safe drinking water, many towns still lack centralized water supply systems. There are practically no rural systems in Georgia. Water sanitary zones are not strictly protected and frequently local populations violate protection regimes due to low awareness and poor law enforcement. Sewerage systems and wastewater treatment plants are absent for a majority of existing water supply systems. Although existing water companies control the quality of tap water, the state control over it is practically absent. In fact, it is the Ministry of Agriculture who is responsible for drinking water quality monitoring and control. However, it does not have enough capacity to properly carry out this function. Furthermore, current water tariffs and absence of metering systems do not provide an incentive for water use efficiency.

*Regarding the disaster risk reduction area,* most widely risk mitigation measures are planned and implemented, while little or no attention is paid to preventive measures. Local authorities, although having a role in planning and implementing local disaster mitigation measures lack knowledge and resources on risk assessment and risk reduction through implementation of preventive measures. Furthermore, natural disaster early warning system is in a pre-mature state in Georgia having only some elements of modern systems, e.g. risk and hazard assessments and mapping are not conducted for the entire country; hydro-meteorological monitoring is significantly diminished; hydro-meteorological forecasts are not well done, especially hydrological forecasts and communication lines and mechanisms are not effective for delivering warning messages to the targeted audience.

*In the power generation sector,* due attention is not paid to the development of environmentally friendly renewable energy sources, except for medium to large hydropower. Under current circumstances, small hydropower and other renewable resources cannot compete with medium to large HPPs due to the thin market and high transaction costs for renewable resources. Complete deregulation of small hydropower plants as well as guaranteed purchase of unsold power by the CSO do not guarantee the relevant stable cash flow for owners/operators of alternative energy sources. The government is against creating more favorable conditions for small hydropower arguing that this will be against its liberal approaches. Likewise, there are no regulatory or market-based mechanisms for improvement of industrial and municipal energy efficiency.

*In the gas and oil sector,* although Georgia is not an oil and gas producing country, there are some deposits of these resources in the country and extraction activities are on-going in various oil and gas fields. Currently, oil production is about 50-60thousand tons annually and gas production - over 20

million m<sup>3</sup> annually, while in late 70s and early 80s production volumes were much higher, reaching over 3 million tons of oil extraction annually. According to Georgian experts' opinions, total oil reserves in Georgia are estimated between 583 mln. Tons and 2,800 mln. tons and gas reserves – between 98 bln.m<sup>3</sup> and 180 bln.m<sup>3</sup>. In the light of Georgia's energy security policy it is expected to maximize domestic gas and oil production that will indeed increase pressures on the environment. Moreover, given oil and gas extraction is not subject to environmental impact assessment and permitting, adverse effects of the sector growth will be multiplied if no regulatory mechanisms are introduced.

*As for waste management and climate change issues* having impacts on ecosystems, these are the weakest areas in terms of legal-regulatory and policy frameworks. There are no national laws or policies governing management of these fields. There is a draft waste law that requires further elaboration and adoption by the government. In the area of climate change, state policies on climate mitigation and adaptation do not exist. The country's capacity to apply the CDM mechanism is also weak. Although there are some on-going projects that study climate vulnerability of various sectors and ecosystems, these studies should be expanded to include all major economic sectors and important ecosystems of Georgia.

#### **4.2 Recommendation on Creating Enabling Environment for Integrated Natural Resources Planning and Management within Watersheds of Georgia**

In order to improve natural resources management in Georgia and to take into consideration integrated natural resources management and watershed management principles, the following general recommendations are suggested by the team of consultants:

##### *Environmental and Natural Resources Management*

#### **1. Legal-Regulatory Framework**

- 1.1 The law on Environmental Protection should be amended to reflect integrated natural resources management and watershed management principles and to call for elaboration of such plans in major watersheds of Georgia;
- 1.2 Methodologies and rules for development of integrated natural resources plans should be developed and adopted either as part of the Law on Environmental Protection or as sub-law/regulation to the given law;
- 1.3 The Law on Environmental Permits should be amended to include activities that might have significant environmental impacts, e.g. mining, including oil and gas extraction, construction of large-size water supply and irrigation systems; The authorities of environmental inspectors should be expanded to allow them to carry out planned inspections of all permit-holder and non-permit holder facilities;
- 1.4 The Law on Environmental Licenses and Permissions should be amended to expand the list of the use of natural resources subject to licensing, e.g. use of non-timber resources including medicinal plants should be included in the list;
- 1.5 Technical regulation of Environmental Protection should be amended to specify effluent limits for different types of activities and capacities of activities;
- 1.6 Feasibility of introduction of BAT standards for new activities or major modifications subject to environmental permitting should be explored and if proved feasible to gradually introduce them together with the BAT Clearing House;



- 1.7 Water abstraction regulations should be revised to set-up more clear and precise terms and conditions for abstractions;
  - 1.8 A national-wide methodology for calculation of environmental flow requirements of rivers should be developed and adopted;
  - 1.9 The draft Environmental Code should be reviewed to ensure adherence to modern environmental principles and approaches and absence of conflicts among the laws;
  - 1.10 The draft law on Water should be further elaborated to define the institutional framework for river basin planning and management, including authorities and responsibilities of central offices of the Ministries of Environment and Energy and Natural Resources as well as authorities of regional government and local self-governing bodies. The scope of the river basin plan should be modified to reflect different water uses as well as use of associated resources; provisions for water resources monitoring and cadastres have to be developed detailing responsibilities of various units of the Ministry of Environmental Protection and Natural Resources. It has to be articulated that river basin plans should be developed based on results of water budgets of the given river basins utilizing water monitoring and water cadastre data;
2. Institutional framework, coordination
    - 2.1 At the national level, restoring the Sustainable Development Commission composed of representatives of various line Ministries and other relevant organizations should be considered as a tool for better integration of various economic and environmental sectors during environmental planning and management as well as for incorporation of environmental considerations into development and/or sectoral planning;
    - 2.2 Communication lines among key Ministries of Environment, Energy and Natural Resources and, Regional Development in the areas the use of natural resources and disaster risk reduction should be clarified
3. Compliance assurance monitoring and control
    - 3.1 Institutional and staff-level capacities of the environmental inspectorate should be developed to effectively carry out compliance assurance monitoring and control;
    - 3.2 Detailed guidelines for environmental inspections should be development and put into practice
4. Natural resource inventories, monitoring, cadastres
    - 4.1 Existing State Water Use Accounting system should be improved and modernized. More specifically:
      - 4.1.1 statistical accounting should be conducted electronically so that water users be able to fill in electronic forms and submit them electronically;
      - 4.1.2 periodic trainings of water users should be carried out on statistical accounting system;
      - 4.1.3 a handbook/guidebook for industrial facilities should be developed and disseminated among targeted audience;
      - 4.1.4 statistical reports should contain integrated information on air emissions, water discharges and waste generation;

- 4.1.5 technical regulation should be developed and adopted on international standard-based methodology for calculation of amounts of water consumption, wastewater discharges, effluent concentrations and solid wastes generated, based on input and output data and other technological parameters. Training of industrial facilities, at least the large facilities should be conducted on a new methodology;
- 4.1.6 data verification and validation system should be introduced;
- 4.2 Capacities for hydro-meteorological and surface water quality and quantity monitoring, water inventories, creating water databases and cadastres should be developed at system, institutional and individual levels;
- 4.3 Capacities for ground water monitoring should be developed at system, institutional in individual levels;
- 4.4 Forest inventories should be conducted and GIS-compatible databases developed;
- 4.5 Unified GIS-based natural resources database should be established within the Natural Resources Agency of the Ministry of Energy;
- 4.6 Linkage between hydro-meteorological, water and related resource use databases should be established

## 5. Natural resources and watershed planning and management

- 5.1 A National Integrated Water Resources Plan should be developed through inter-Ministerial efforts;
- 5.2 Rules, procedures and methodologies for river basin planning should be developed either as a part of the Water Law or as a separate regulation of the law;
- 5.3 Unified methodologies for calculating water budgets should be adopted and water budgets calculated for rivers of high importance;
- 5.4 The entire country of Georgia should be divided into river basins and/or smaller watershed planning and management units;
- 5.5 Integrated river basin/natural resource management plans should be developed for river basins of high importance;
- 5.6 Economic valuation of ecosystem goods and services for major ecosystems of Georgia should be carried out;
- 5.7 Protected areas planning should be conducted in a way to take into consideration long-term conservation goals as well as interests of local populations. Migratory corridors should be taken into consideration during the PAS planning in order to ensure the resilience of species and ecosystems. For improvement of PAs planning to include ecological corridors and important landscapes, and to establish multi-purpose areas the system and the modern tools for spatial and landscape planning should be introduced. PAs management plans should be updated or new ones developed for all PAs that will also integrate sound business models;
- 5.8 Sustainable models for management of PAs buffer zones have to be developed as part of the management plans of the PAs. The lessons learned from pilot model introduced in Mtirala National Park through the support of CEPF Caucasus<sup>10</sup> or, the successes of other

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<sup>10</sup> This model focused on sustainable use of plant resources in the support zone of Mtirala National Park. That included the creation of plant nurseries for economically valuable species as well as the establishment of various eco-tourism activities and a local business centre. Local communities were involved in the development of these models and they continue to receive a direct benefit from them.

existing models, if such can be applied while designing sustainable management mechanisms for buffer zones ;

5.9 PAs should be expanded to include areas with wild relatives of cultivated plants;

5.10 Boundaries of state and local forests should be demarcated and part of the local forests should be transferred to local self-government bodies either under their ownership or under their management. For this, forest inventories should be conducted where they are absent or updated where exist. Demarcation of forest boundaries should be conducted in close cooperation with all state agencies and local authorities concerned. The process of ownership transfer should be supported by adequate financing and logistics, since the local authorities cannot afford to cover initial costs of local forest management. Since local forests are severely degraded transfer of the part of the State Forests adjacent to local forests (former collective farm forest) or located within the boundaries of self-government to local authorities should be considered with a purpose to supply local population with firewood or to meet other domestic needs. However, this should be done with careful consideration of local socio-economic and geographic conditions (poverty level, traditions, location, local capacities, etc.). Together with forests other natural assets, including rivers, mineral, fauna and flora to be transferred to local authorities should be assessed;

5.11 Management plans should be developed for local forests, clearly defining management procedures and rights and responsibilities of local stakeholders. Local forestry plans together with the management actions should include business models, defining different revenue sources and estimating cash flows. In addition to getting the revenues from the use of timber resources, local authorities should consider receiving revenues from the use of non-timber resources, hunting and tourism. Establishment of local forest plantations for meeting the local needs for firewood or for commercial purposes (production of nuts, wood chips, food for bees, wood production for pulp and paper industries, etc.) should be also considered. Harvesting should not be allowed in former collective farm forests. Instead, non-commercial forest use activities that benefit the local communities or local development can be considered, e.g. use of these forests as erosion control areas (windbreaks), plantations for production of secondary timber materials (woodchips), establishment of hunting farms, etc;

5.12 For the implementation of local forestry plans capacities of local authorities and communities should be enhanced. On-the ground management works in local forests may be carried out either through management contracts with private companies or through forestry services established by municipalities or local communities as private companies and contracted by one of several local government institutions;

5.13 Local authorities should be given the power to make their own management and financial decisions, by licensing the use of forest products, setting-up local forest use fees and retaining all the revenues generated from these activities. Local communities should have a priority right for buying products harvested on the basis of local self-government's decisions, at preferential prices;

5.14 Forest use rules (rules of cutting, restoration and other activities) should be uniform all over Georgia regardless of the form of ownership or management of forest areas. Local Forestry Services should have the responsibility for controlling forestry management activities. Illegal cutting, both unauthorized and cutting of larger volumes than specified in the permit, should be subject to respective penalties by the Environmental Inspectorate or other responsible state agency;

If local self-government fails to fulfill the above management obligations, the State should have the power to take back the transferred areas;

#### 6. Waste management

- 6.1 In the area of waste management, waste law should be elaborated and adopted;
- 6.2 Waste management strategy should be elaborated and adopted

#### 7. Climate change mitigation and adaptation

- 7.1 In the area of climate change, Low Emission Development Strategy and National Adaptation Plan for Action should be developed;
- 7.2 Capacities of decision-makers and private companies for application of CDM mechanisms, including programmatic CDMs should be developed as well as capacities for climate risk and vulnerability assessments.

#### 8. Private Sector Participation in Environmental and Natural Resource Management

- 8.1 Private sector participation in community development and local natural resource management activities should encouraged and fostered, through facilitating a dialogue among local businesses, communities and authorities, helping industries create sound public image (e.g. through participating in community activities or funding such activities); promoting establishment of public-private partnerships, etc.

### *Agriculture Sector*

#### 1. Land reclamation

- 1.1 A land reclamation policy/strategy should be developed;
- 1.2 Institutional reform in irrigation-drainage sector should be further implemented to make the sector efficient and effective;
- 1.3 Incentives for irrigation water use efficiency and introduction of state-of-the art technologies should be developed and adopted

#### 2. Food safety

- 2.1 Compliance assurance control authority of the Food Safety, Veterinary and Plant Protection Service should be expanded and its capacities enhanced;
- 2.2 Regulatory mechanisms for implementation of the law on Biosafety should be adopted;

#### 3. Good agriculture practices

- 3.1 Incentive mechanisms for farmers using good agriculture and organic agriculture practices should be introduced

### *Potable Water and Sanitation Sector*

## 1. Water safety

- 1.1 Water safety planning and management, including water quality risk assessment and monitoring should be introduced by existing water utilities;
- 1.2 Government capacities for drinking water quality control should be developed;
- 1.3 Capacities of existing water utilities should be enhanced for proper operations and maintenance as well as water quality control of their systems

## 2. Water use efficiency

- 2.1 Individual water metering systems should be installed;
- 2.2 Losses in the drinking water network should be reduced/minimized through replacement or repair of the networks
- 2.3 Proper water tariffs taking into consideration affordability of Georgian population should be set to ensure cost-recovery and reasonable profit. Step/block tariffs can also be applied to take into consideration social factors, e.g. interests of the poorest people

## 3. Wastewater collection and treatment

- 3.1 Wastewater collectors should be constructed where they do not exist and replaced where they exist but are in poor conditions
- 3.2 Wastewater treatment plants should be installed and the strategy for wastewater treatment developed

## 4. Management and organizational capacities

- 4.1 GIS-based interactive electronic database of existing infrastructure should be developed within the united water company;
- 4.2 Contingency and business continuity planning should be introduced and/or strengthened within the united water company

### *Disaster Risk Reduction*

#### 1. Early warning systems

- 1.1 Natural disaster early warning systems should be developed, including risk assessment, risk monitoring and forecasting and, risk communications components;

#### 2. Disaster risk prevention

- 2.1 Based on risk knowledge information, preventive measures, both structural and non-structural should be planned and implemented. Among non-structural measures, one could consider setting-up proper floodplain and watershed land use policies; Structural measures include non-traditional bio-engineering (e.g. afforestation, revegetation, terracing, etc.) and traditional engineering measures (e.g. construction of gabions, dikes, levees, etc);

#### 3. Disaster management planning

- 3.1 Unified formats and methodologies for disaster management plans should be developed;
- 3.2 Disaster management plans at municipality and/or regional level should be developed
- 4. Capacities for disaster preparedness, response and recovery
  - 4.1 Capacities for disaster preparedness, response and recovery at both national and local levels should be enhanced;
- 5. Communications
  - 5.1 Better communication lines among various Ministries responsible for DRR should be established.

## *Energy Sector*

- 1. Renewable energies
  - 1.1 Legal basis favorable for renewable energies, including small hydropower and other alternative sources of energies should be developed and adopted either as a part of existing law on Electricity, Oil and Gas or as a separate law;
  - 1.2 Proper policies should be adopted for promotion of utilization of local renewable energy sources (e.g. feed-in tariffs, tax relief, guaranteed purchase of electricity, etc);
  - 1.3 While developing large hydropower schemes, environmental and technical safeguards should to be carefully considered during both construction and operations phases
- 2. Energy efficiency
  - 2.1 Legal framework favorable for energy efficiency should be developed and adopted either as a part of existing law on Electricity, Oil and Gas or as separate law;
  - 2.2 Proper policies should be adopted for promotion of energy efficiency;
  - 2.3 Awareness of general public, public institutions and private sector on the benefits of implementing low-cost energy efficiency measures or using energy-efficient appliances should be raised through show rooms, voluntary walk-in energy audits, implementing demo projects, producing and distributing promo materials, incorporating energy efficiency issues in academic curricula, etc.
- 3. Energy sector sustainable management
  - 3.1 National and local capacities should be built for optimum planning and management of Georgian energy sector
  - 3.2 Environmental safeguards and impacts should be taken into consideration during the gas and oil exploration and extraction operations; management plans for decommissioning/conserving oil and gas fields should be prepared by the developers;

### 3.3 Individual metering for natural gas consumption should be carried out through out entire Georgia

Based on above recommendations and as well, based on outcomes of wide consultations with government authorities that will be conducted under the INRMW program from June through July 2011 the program team will identify priority technical assistance and advisory interventions relevant to the INRMW program and, design a program of technical assistance to the GoG. Technical assistance and advisory services will be provided to the relevant authorities throughout the entire program period. The support area might include, but not limited to integrated natural resource and river basin management, agriculture water use efficiency, water safety, energy efficiency and renewable energies, disaster risk reduction and climate change, environmental law enforcement, etc. The special attention will be paid to the area of climate change and Georgia's increased participation in the Clean Development Mechanism of the Kyoto Protocol.

## **ANNEXES**

Annex 1. Current Surface Water Quality Standards in Georgia

Annex 2. International Environmental Agreements, which Georgia is a Party

Annex 3. Brief Information about ongoing Environmental Projects Financed by Donor Organizations

Annex 4. Sanitary Requirements for Drinking Water Quality

Annex 5. Ongoing Project in the Field of Water Supply and Sanitation

Annex 6. List of On-going HPP Investment Projects (MoUs Signed)

Annex 7. Map of the Project Sites; Alazani-Iori and Rioni River Basins



## Annex 1

### Current Surface Water Quality Standards in Georgia

Current Georgian surface water quality standards are included in the Guidelines for Surface Water Pollution Protection, adopted by the Ministry of Environment of Georgia and approved on 17 September 1996

Parameter	Water for the Abstraction of Drinking Water	Water for Recreation	Water for Fish	
			I category	II category
Suspended Solids, mg/l	B* + 0,25	B* + 0,75	B* + 0,25	B* + 0,75
Color	no visible change in 20 cm column	no visible change in 20 cm column	no visible change	no visible change
Odor, taste	1 conditional unit by 5-unit scale	1 conditional unit by 5-unit scale	no detectable change	no detectable change
Temperature, °C	maximum change in summer - 3° increase	maximum change in summer - 3° increase	< 20°C in summer, <5°C in winter	<28°C in summer, <8°C in winter
pH	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5	6.5 - 8.5
Total Dissolved Solids, mg/l	1000	Ratio is set in according to "taste"	–	–
Dissolved Oxygen, mg O <sub>2</sub> /l	>4	>4	>6	>6
BOD, mg O <sub>2</sub> /l	3	6	3	6
COD, mg O <sub>2</sub> /l	15	30	–	–
Total coliform bacteria	100 in 1 l sample	100 in 1 l sample	–	–
Ammonium (as N <sub>NH4</sub> ), mg/l	0.39	0.39	0.39	0.39
Aluminum (Al), mg/l	0.5	0.5	0.5	0.5
Barium (Ba), mg/l	0.1	0.1	2.0	2.0
Beryllium (Be), mg/l	0.0002	0.0002	0.0002	0.0002
Boron (B), mg/l	0.5	0.5	10.0	10.0

Arsenic (As), mg/l	0.05	0.05	0.05	0.05
Vanadium (V), mg/l	0.1	0.1	0.001	0.001
Mercury (Hg), mg/l	0.0005	0.0005	0	0
Wolfram (W), mg/l	0.005	0.005	0.0008	0.0008
Zinc (Zn), mg/l	1.0	1.0	0.01	0.01
Cadmium (Cd), mg/l	0.001	0.001	0.005	0.005
Cobalt (Co), mg/l	0.1	0.1	0.01	0.01
Caprolactam, mg/l	1.0	1.0	1.0	1.0
Manganese (Mn), mg/l	0.1	0.1	0.01	0.01
Molybdenum (Mo), mg/l	0.25	0.25	0.012	0.012
Nitrites (NO <sub>2</sub> ), mg/l	3.3	3.3	0.08	0.08
Nitrates (NO <sub>3</sub> ), mg/l	45.0	45.0	40.0	40.0
Nickel (Ni), mg/l	0.1	0.1	0.01	0.01
Iron (Fe), mg/l	0.3	0.3	0.005	0.005
Selenium (Se), mg/l	0.001	0.001	0.0016	0.0016
Copper (Cu), mg/l	1.0	1.0	0.001	0.001
Sulphates (SO <sub>4</sub> ), mg/l	500	500	100	100
Antimony (Sb), mg/l	0.05	0.05	0.05	0.05
Thallium (Tl), mg/l	0.0001	0.0001	0.0001	0.0001
Titanium (Ti), mg/l	0.1	0.1	0.1	0.1
Lead (Pb), mg/l	0.03	0.03	0.1	0.1
Tellurium (Te), mg/l	0.01	0.01	0.0028	0.0028
Phosphorus element. (P), mg/l	0.0001	0.0001	0	0
Fluorides (F), mg/l	0.05	0.05	0.05	0.05
Chlorides (Cl), mg/l	350	350	300	300
Chromium (Cr-Y!), mg/l	0.1	0.1	0.001	0.001

Cyanides (CN), mg/l	0.1	0.1	0.05	0.05
Ethylene (CH <sub>2</sub> =CH <sub>2</sub> ), mg/l	0.5	0.5	0.5	0.5
Synthetic Surface Active Substances (Detergents), mg/l	0.1	0.1	0.1	0.1
Methanol (CH <sub>3</sub> OH), mg/l	3.0	3.0	0.1	0.1
Oil products, mg/l	0.3	0.3	0.05	0.05
Formaldehyde (HCHO), mg/l	0.05	0.05	0.01	0.01
Acetone (CH <sub>3</sub> ) <sub>2</sub> CO, mg/l	2.2	2.2	0.05	0.05
Butyl alcohol (CH <sub>3</sub> ) <sub>3</sub> COH, mg/l	0.1	0.1	0.03	0.03
Phenols (C <sub>6</sub> H <sub>5</sub> OH), mg/l	0.001	0.001	0.001	0.001

### International Environmental Agreements, which Georgia is a Party

Title	Date of ratification by Georgia	Implementation status
<ul style="list-style-type: none"> <li>• Convention on the Protection of the Black Sea Against Pollution</li> <li>• The Black Sea Biodiversity and Landscape Convention Protocol</li> <li>• Protocol on the Protection of the Marine Environment of the Black Sea from Land-Based Sources and Activities</li> </ul>	September 1, 1993 September 26, 2009 September 26, 2009	Integrated Coastal Zone Management (ICZM) strategy and action plan developed; progress reports to the convention secretariat provided
International Convention for the Prevention of Pollution from Ships	November 15, 1993	Ballast waters and wastes generated by all incoming ships are checked against by EMO standards
United Nations Framework Convention on Climate Change Kyoto Protocol of UNFCCC	May 16, 1994 May 28, 1999	First and second national communications submitted to the UNFCCC secretariat; preparatory works for development of the third national communications initiated; a number of mitigation projects implemented; an adaptation project against desertification implemented; a number of adaptation projects planned; none of the CDM projects implemented
Convention on Biological Diversity Cartagena Protocol on Biosafety	June 2, 1994 September 26, 2008	<p>BSAP adopted; bio monitoring indicators and methodology set-up; CBD target for protected areas met by over 70% (e.g. 7.14% of Georgia's territory is covered with PAs); four national reports sent to the CBD secretariat; biodiversity clearing house established; Georgian red list updated; a number of species in-situ and ex-situ conservation activities implemented; a number of ecosystem conservation and protection activities implemented; agrobiodiversity species in Samtskhe-Javakheti region restored and in use by farmers; seed bank for these species established, etc.</p> <p>Things to be done in the areas of biodiversity monitoring, including wetlands inventories, public awareness, bio-safety; law enforcement, improvement of management effectiveness of PAS,</p>

		protection of biodiversity outside PAS, forestry, regulation of the use of non-timber resources for food, medicinal or decorative purposes, etc.
The Vienna Convention for the Protection of the Ozone Layer Montreal Protocol on Substances that Deplete the Ozone Layer	November 8, 1995 November 8, 1995	CFC-12 completely phased out; HCFC management plan developed and submitted to the Ozone secretariat; annual reporting to the convention secretariat implemented
Convention on International Trade in Endangered Species of Wild Fauna and Flora	September 13, 1996	Quotas and permits established for the species subject to CITES
Ramsar Convention on Wetlands	April 30, 1996	Wetland alder forests, peat bogs and Paliastomi Lake designated as RAMSAR sites within the boundaries of Kolkheti national park and Kobuleti nature reserve and managed reserve. Javakheti plateau lakes: Khanchali, Madatafa and Bughdasheni also presented for consideration as RAMSAR sites under the Javakheti uplands as protected areas is currently underway.  Construction of Kulevi oil terminal affected significantly the part of the RAMSAR site of the Kolkheti national park
Convention on Long-range Transboundary Air Pollution	January 13, 1999	Annual reports submitted to the convention secretariat on pollutants emissions per industrial sectors; Model for PRTR developed
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposals	May 4, 1999	Annual reports on movement of wastes are sent to convention secretariat
United Nations Convention to Combat Desertification	July 23, 1999	Desertification state program developed; national report submitted to the convention secretariat
Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters	February 11, 2000	Arhus center established and became operational; public participation envisaged in EIA process

<ul style="list-style-type: none"> <li>• Convention on the Conservation of Migratory Species of Wild Animals</li> <li>• Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area</li> <li>• African/Eurasian Migratory Waterbird Agreement</li> <li>• Agreement on the conservation of Bats in Europe</li> </ul>	<p>February 11, 2000 March 21, 2001</p> <p>May 1, 2001 July 25, 2002</p>	<p>Cetaceans conservation plan developed by the Black Sea Scientific panel is under the review by the Ministry of Environment for approval;</p> <p>Important areas for migratory bird species designated;</p> <p>Bats conservation plan developed by the NGO Campester is under the review of the Ministry of Environment</p>
<ul style="list-style-type: none"> <li>• Agreement between Georgia and International Atomic Energy Agency for the application of safeguard in connection with the threat on the non-proliferation of nuclear weapon</li> <li>• Protocol Additional to the Agreement between the Republic of Georgia and the International Atomic Energy Agency for the Application of Safeguards in Connection with the treaty on the Non-proliferation of Nuclear Weapons.</li> </ul>	<p>April 24, 2003</p> <p>April 24, 2003</p>	<p>Additional Protocol declaration is sent to the Atomic Agency once in a 3 years through the Ministry of Foreign Affairs</p> <p>Safeguard inspections of potential sources are carried out and verification documents are submitted to the Agency's secretariat once in a 2 years</p>
Stockholm Convention on Persistent Organic Pollutants	April 11, 2006	DRAFT NIP developed and approved in 2010; limits for releases of PoPs into the environment and their concentrations into ambient environment not set-up; about 200 t PoPs pesticides collected and safely disposed into temporary storage; about 200t of obsolete PoPs pesticides
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade	December 1, 2006	Information on import of hazardous chemicals and pesticides is shared with the convention secretariat on a regular basis
Convention on the Conservation of European Wildlife and Natural Habitats	December 30, 2008	In the framework of Joint Programme: "Support for the implementation of the Convention on Biological Diversity Programme of Work on Protected Areas in the EU Neighbourhood policy East area and Russia: extension of the implementation of the EU's NATURA 2000 principles through the Emerald Network" 17 sights have joined Emerald Network

## Brief Information about Ongoing Environmental Projects Financed by Donor Organizations

#	Project Title	Date	Financed by	Grant amount
Biodiversity				
1	Sustainable Management of Biodiversity in South Caucasus	2008-2016 1st phase: 2008-2011	German Federal Ministry for Economic Cooperation and Development (BMZ) implemented by GTZ	20 000 000 Euro in Total, for Georgia 7000000 Euro
2	Improving implementation of CITES for Galanthus woronowii and Cyclamen coum from Georgia	2009 – present	Dutch Government through Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	24,300 USD
Climate Change				
3	Climate Change Adaptation and Disaster Mitigation – CENN	October 1 2009 - September 30 2012	USAID	500 000 USD
4	Climate Tolerant Rehabilitation of Degraded Landscapes, Georgia	2008 – 2011	German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety Development (BMU) implementation GTZ	1, 560 000 Euro
5	Support to Kyoto Protocol Implementation	2008 – 2011	EU	4 787 ml Euro (12 countries) 400 000 Euro for Georgia
6	Enabling Activities for the Preparation of Georgia's II National Communication to the UNFCCC Regional project: Armenia, Azerbaijan, Georgia	2010 January 2010 December	UNDP/ENVSEC	148 000 US \$
7	Technology needs Assessment capacity building (climate change impacts adaptation, mitigation )	2010 -2011 (12 months )	GEF/UNEP	120 000 USD
DRR				
8	Institutional building for natural disaster risk reduction in Georgia –	May 2009 – November 2011	MATRA	726 145 Euro

	ITC/CENN			
9	Strengthening local capacity and developing structured dialogue and partnerships for mitigating natural disasters and reducing poverty in Georgia, - EC Delegation to Georgia/CENN	March 2009 – August 2011	EU	250 000 Euro
10	Georgia Market Alliances against Poverty (MAAP), SDC / Mercy Corps/CENN, Georgia	October 2008 – December 2011	SDC	
Energy Resources				
11	Clean Energy Promotion Using Solar Photo Voltaic System in Georgia	2010-2011	Government of Japan (JICA – Japanese International Cooperation Agency)	5 000 000 USD
12	Georgia – Promoting the use of renewable energy resources for the local energy supply	2004 – 2011	UNDP/GEF- Government of Germany (managed by KfW), Government of Georgia (not in-kind):	13 220 000 USD UNDP/GEF: 4 300 000 USD Government of Germany; KfW 5 112 918,81 Euro Government of Georgia: USD 150000 other local Resources: 3 400 000 USD
13	Renewable Energy for Remote Areas of Georgia- Photovoltaic Panels in Thusheti	2010-2011	Czech Development Agency	250 000 USD
Water Resources				
14	Support of the Improvement of Quality management System of Water Quality Monitoring and Information System as tool of Decision making Process in Water policy in Georgia	2009-2010	Slovak - ODA	24 550 euro



15	Transboundary river management phase II for the Kura river (Georgia, Azerbaijan, Armenia)	2008-2011	EU	EUR 3,174,500
16	Upgrading of Black Sea Scientific Network	2009 – 2011	FP7 Program of EU Council	36.000 Euro for the National Environmental Agency-MEPNR of Georgia Total: 4.000 000 Euro
17	Identification of the legal and Institutional needs for accession and implementation of the UNECE Water Convention by Georgia and (Geo-Azerbaijan)	2008-2010	UNECE/OSCE Under ENVSEC Initiative	35 3000 EU
18	Creation of an Enabling Environment for Integrated Management of the Kura-Aras Transboundary River Basin	2007-2010	EU (implemented by REC Caucasus)	EUR 399,700
19	Natural Management of Natural Resources in Watersheds of Georgia	2010-2015	USAID	6 500 000
Land Resources				
20	Sustainable Land Management for Mitigating Land Degradation and Reducing Poverty in the South Caucasus Region - EC Delegation to Georgia/REC/CENN	February 2009 – February 2012	EU	1,426,485 EURO
Protected Areas				
21	International Technical Assistance Programme of US Department of Interior	2006 – 2010	US Department of Interior (USDol)	670 000 USD
22	Ensuring Sufficiency and Predictability of Revenues for the Georgia's Protected	2010-2016	GEF/CNF (Caucasus Nature Fund, CPAF)	1 000 000 €

	Areas System			
23	Eco-regional Conservation Programme for Southern Caucasus, Georgia- Establishment of Javakheti National Park	2009-2012	German Ministry for Economic Cooperation and Development (BMZ) through KfW	2. 250 000 Euro
24	Development of Borjomi-Kharagauli National Park	2005 – 2009 (2010 remaining funds)	German Ministry for Economic Cooperation and Development (BMZ) through KfW	400 000 Euro
25	Catalyzing Financial Sustainability of Protected Area System	2009-2011	Global Environment Facility GEF,	875 420 USD
26	Ecoregional Conservation Programme /Development of Kazbegi National Park,	2011-2014 (I phase)  2015-1-17 (II phase)	German Federal Ministry of Economic Cooperation and Development (BMZ) German Reconstruction Credit Bank (KfW) Grant	4 000 000 Euros (pipelined) 4 000 000 Euros (planned) (BMZ), KfW feasibility study 180 000 Euro (finished) Extension of Feasibility Study 40 000 Euros (on-going)
27	Ensure Sustainable Development of Protected Area System of Georgia by Financial support of CPAF	2009-2010	Caucasus Protected Areas Fund CPAF Grant	276 000 Euro
28	Creation of Emerald Site in Georgia and Integration in International Network	2009-2011	EC-Europe Commission	110 000 Euro
29	Development of Sataplia State Natural Reserve	2010-2011	BTC Co & SCP Co	3.5 mln.USD
30	Creation of Ktsia-Tabatskuri Managed Nature Reserve infrastructure	2010	British Petroleum in Georgia (BP), The International Union for Conservation of Nature (IUCN); Grant	150 000 USD
31	Delivering protected area capacity and engaging traditional pastoral communities to conserve Georgia's unique and internationally important	2009-2011	EU/FFI/NACRES	890,488 USD

	biodiversity			
32	Support Vashlovani PAs management	2010-2011	Government of Germany	90 000 Euro
Environmental Inspection				
33	Georgia: Technical Assistance to the Ministry of Environment to strengthen project monitoring and enforcement capacities	2006 – 2010	EBRD, (European Bank for Reconstruction and Development)	250 000 Euro
34	Support to the professionalization of the Georgian Inspectorate	2010-2011	Government of Holland	300 000 euro
Institutional Strengthening				
35	FORECAST program providing an institutional assessment and technical assistance to the Ministry of Environment Protection and Natural Resources of Georgia	2009 September 2010 September	USAID	150 000 USD
36	Preparation of Second Environmental Action Plan (NEAP)	2009 Oct -2010 Dec	Dutch Government	150 000 EUR
37	Assessment of Ecological conditions city of Tbilisi and capacity Building	2010-2011	ENVSEC	110 000 EUR
Forest				
38	Bakhmaro Resort Zone Forest Recovery and Reforestation Program And Eco-Awards Program	2010-2013 Bakhmaro Project 2012-2014 Eco-Awards	BTC Co and SCP Co	1 250 000 USD
39	Improving Forest Law Enforcement and Governance in the European Neighborhood	2008-2011	EU	6 mln Euros (for all seven countries) Georgia, Azerbaijan, Armenia, Belarus,

	Policy East Countries and Russia – ENPI FLEG			Moldova, Russia, and Ukraine
40	Support the Institutional Development of the Forest Sector for Georgia	September – December 2010 (4 months)	Food and Agriculture Organization (FAO)	53,467 USD
41	Enhancing National Capacity on Fire Management and Wildfire Disaster Risk Reduction in the South Caucasus	18 months Started in January 2010	Environment and Security Initiative (ENVSEC)	Total 95,695 EURO  For activities to be implemented in Georgia – 30,600 EURO
42	Development of National Forest Policy and Strategy	2009-2011	FAO	310 000
43	Communal Forest Pilot Project Kharagauli	2008-2011	the French Development Agency (Agence Francaise de Développement - "AFD")	1 200 000 Euro
44	Restoration of Forest Ecosystems Damaged in Armed Conflict in Georgia	2010 – 2015	Government of Finland	1 500 000 USD
45	Improving Forest Law Enforcement and Governance (FLEG) in the ENP East countries and Russia	2008-20011	EU , WB, IUCN, WWF	6 000 000 Euro for Georgia about 1 000 000
46	Forestry in Georgia: Sustainable Production, Sustainable consumption	2009 -2012	United States Agency for International Development (USAID)	288 000 USD
47	Mitigating Impacts of Climate Change through the Restoration of Forest Landscapes in the Southern Caucasus	2008– 2011	German Ministry of Environment and Nuclear Safety (BMU) via WWF	About 4 800 000 mln Euros for Georgia, Armenia and Azerbaijan; of this – about 1.2 mln Euros for Georgia
Waste and Chemicals				
48	Strengthening Capacities for Designing National Chemicals Management Profile, Supporting SAICEM Implementation in Georgia	2009-2010	SAICM Quick Start Programme Trust Fund , UNDP/UNITAR	200 000 Euro

49	" Capacity Building on Obsolete and POPs Pesticides in Easter European, Caucasus and Central Asian (EECCA) countries".( 9 countries)	2009-2011	GCP/INT/062GEF FAO/GEF Project +Co-financing from other sources	1000 000 USD
50	Twining programme: Waste management	2010-2012	EU Austria/Bulgaria	1250 000 Euro
51	Development of a sanitary landfill for household waste in Georgia	2009-2011	Dutch Government	1 200 000 Euro
52	Hospital Waste Management Project in Georgia.	2009-2011 (24 month)	Dutch Government	600 000 Euro
53	Ajara Solid Waste Management Project	Board data: 12 January 2010	EBRD-loan, Grants: Swedish International Development Agency (SIDA), ETC fund	Total € 8.3 million EBRD loan-€ 3 million EUR, Grant from SIDA - €4.7 million, Grant from ETC fund-€ 0.6 million
54	Rustavi Solid Waste Management Project	2009-2011	EBRD Loan + co-financing grant	Total € 5.46 million EBRD loan-€1.6 mln, grant from donors-€ 4.66 million Local contribution € 0.8 mln

## Annex 4

**Sanitary Requirements for Drinking Water Quality(Defined by the Technical Regulation of Drinking Water. decree #349/N Ministry of Labor, Health and Social Affairs of Georgia 17.07.07)**

Index	Measuring unit	Standard not more than
Smell	Numbers	2
Taste	Numbers	2
Coloration	Degree	15
Turbidity	Turbidity unit (by formazin or Mg/l by kaolin)	3,5 2
Sulphate (SO <sub>4</sub> <sup>2-</sup> )	mg/l	250
Chloride (Cl <sup>-</sup> )	mg/l	250
Oil products, total	mg/l	0.1
Surfactant substance anion active	mg/l	0.5
Rigidity	mg-eq/l	7-10
Calcium (Ca)	mg/l	140
Magnesium (Mg)	mg/l	85
Sodium (Na)	mg/l	200
Zinc (Zn 2+)	mg/l	3.0
Iron (Fe, total)	mg/l	0.3
Mezophilic aerobes and facultative anaerobes	Colony forming unit/ml 37 0C 22 0C	20 100
Total coliformic bacteria	Amount of bacteria in 300 ml	not allowed
E.coli	Amount of bacteria in 300 ml	not allowed
Pathogenic microorganisms, including Salmonella	In 100 ml	not allowed

Coliform	Negative colony forming unit in 100 ml	not allowed
Pseudomonas aerugiosa (only for pre-aliquoted)	in 250 ml	not allowed

## Annex 5

### Ongoing Projects in the Field of Water Supply and Sanitation

Project survey	Location	Impl. agent	Financial organization	Investment cost in GEL
Rehabilitation of the headwork in Mukhiani and Partskhanakanebi (installation of 50 new vertical boreholes) and construction of new water pipeline network for 30 streets  Replacement of the new supply main line network (with converters) in car factory settlement rehabilitation of 3 reservoirs (9000 m3 in total)	Kutaisi	MDF	EBRD	4 100 000
Construction of the new headwork and main line network of 46 km long, replacement and installation of wells and valve, reconstruction of the internal water supply system of the city with each resident including converter pipes	Poti	MDF	EBRD	27 000 000
Rehabilitation works of the water pipeline system	Martvili municipality	MDF	ADB	922 786
Rehabilitation works of the water pipeline system of the internal city network of water pipeline (15km long).	Oni municipality	MDF	World Bank	1 101 712
Rehabilitation works of the water pipeline system, which includes rehabilitation of the water supply system in Vale	municipality of Akhaltsikhe	MDF	ADB	1 138 987
Rehabilitation works of the water pipeline system	municipality of Kaspi	MDF	EBRD	1 873 900
Rehabilitation of the water supply system.	municipality Gurjaani	MDF	EBRD	3 777 600
Rehabilitation of the water supply system.	Telavi municipality	MDF	EBRD	5 971 200
Water supply system rehabilitation	municipality of Kvareli	MDF	EBRD	1 567 200



The water supply system rehabilitation	municipality of Signagi	MDF	EBRD (first phase)  ADB (second phase)	746 900 (first phase)  11 001 550 (second phase)
Rehabilitation of water supply and sewerage system	municipality of Bagdadi	MDF	EBRD	850 000 000
Water supply rehabilitation project	municipality of Samtredia	MDF	EBRD	1 135 440
Water supply rehabilitation and construction of sewerage system	Chiatura	MDF	EBRD(frist phase)  ADB (second phase)	82 50 400
Water supply system rehabilitation.	municipality of Tskaltubo	MDF	EBRD	7 272 000
Rehabilitation of water supply and sewerage system.	municipality of Lanchkhuti	MDF	EBRD	2 606 400
Rehabilitation of water supply system and sewerage service	municipality of Ozurgeti	MDF	EBRD	1 018 248
Rehabilitation of the pumping station and installation of the new pump devices. The existing network of 300 mm in the system is replaced by the new pipeline of diameter 100 mm. Together with this, section of 700 mm long is replaced by the polyethylene pipeline of diameter 500 mm from the booster station up to the refugee settlement.	municipality of Surami	MDF	World Bank	6 268 800

## Annex 6

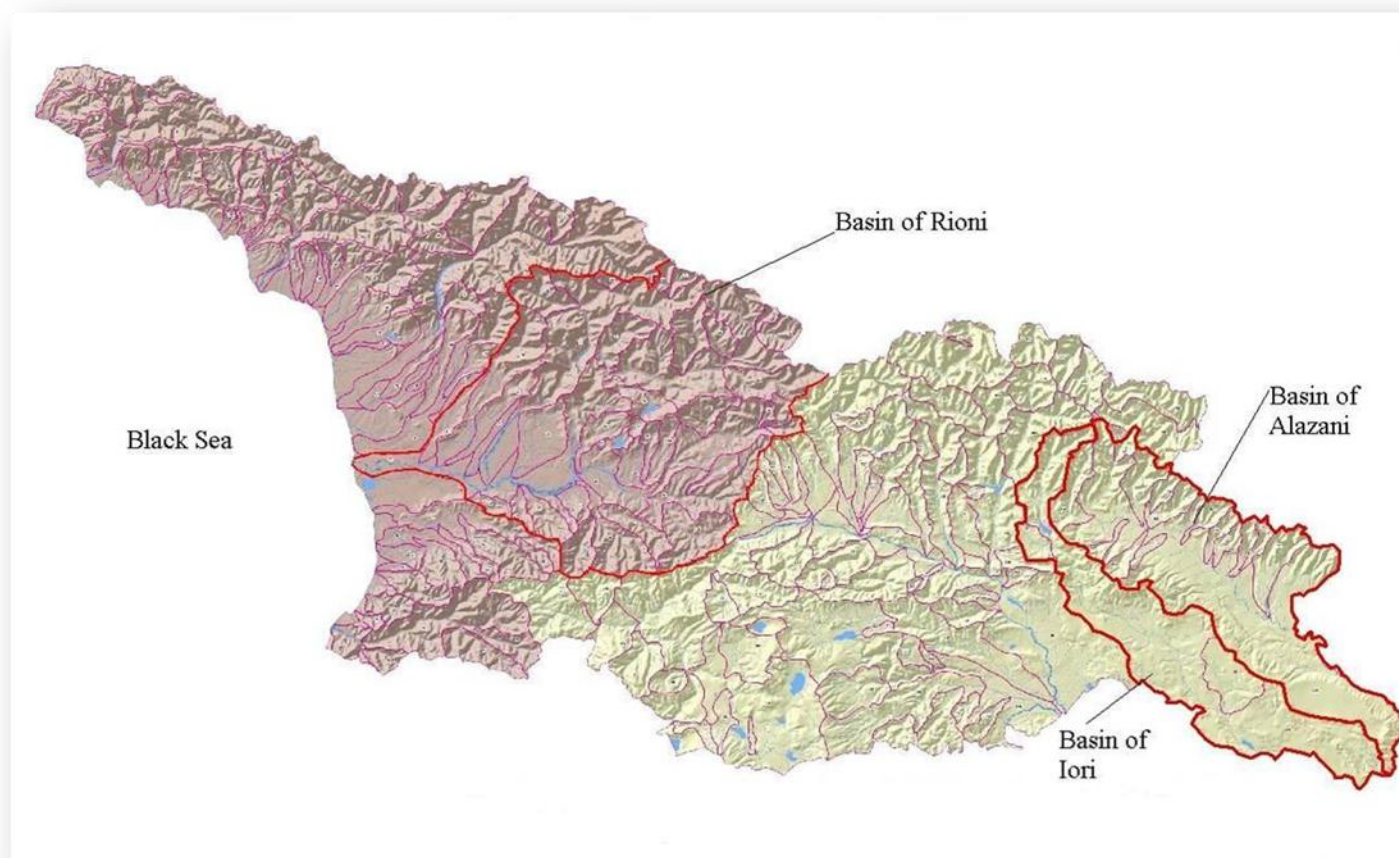
### List of On-going HPP Investment Projects (MoUs Signed)

	Name	Company	Country	In- stalled Capa- city (MW)	Annual Genera- tion (GW/h)	Estimated Investment (USD)	MoU signing date	Start of Construction	Completion of Construction
Total				2,073	6,941	3,273,420,000			
1	Chorokhi 1 HPP	Ajara Energy	Turkey	24	152	33,600,000	2008 February 28 (Amendment 8 June 2009)	2012 January 01	2016 December 31
2	Chorokhi 2 HPP	Ajara Energy	Turkey	24	152	33,600,000	2008 February 28 (Amendment 8 June 2009)	2012 January	2016 December 31
3	Khelvachauri HPP	Ajara Energy	Turkey	22.4	144.1	31,360,000	2008 February 28 (Amendment 8 June 2009)	2012 January 01	2016 December 31
4	Kirnati HPP	Adjar Energy	Turkey	14.4	96	20,160,000	2008 February 28 (Amendment 8 June 2009)	2012 January 01	2016 December 31
5	Bakhvi HPP	Bakhvi Hydro	Estonia	6	35	9,700,000	2009 May 14	2009 June 01	2011 June 01
6	Mtkvari HPP	Caucasus Energy and Infrastructure	Georgia	43	200	65,000,000	2008 November 24	2009 December 01	2015 September 01
7	Khudoni HPP	Trans Electrica Ltd	India	702	1,500	700,000,000	2007 June 29 (Amendment 2009 December 21)	2012 March 30	2017 March 30
8	Aragvi HPP	EnergoAragvi	Georgia	8	50	11,000,000	2007 September 4	N/a	+3 Years*
9	Khobi HPP 1	Georgian Investment Group	Georgia	46.5	247	81,000,000	2009 September 15 (Amendment April 30, 2010)	2014 November 01	2017 November 01
10	Khobi HPP 2	Georgian Investment Group	Georgia	39.5	221	65,000,000	2009 September 15 (Amendment April 30, 2010)	2010 September 01	2014 April 01
11	Paravani HPP	Georgian Urban Energy (partner Anadolu Group)	Turkey	78	425	125,000,000	2007 May 29 (Amendment 2009 April 10)	2009 July 24	2013 July 24
12	Namakhvani	KEPCO-	South Korea-	450	1,677	1,000,000,000	2009 December	2011 2nd	2017 2nd

	Cascade	NurolSK International	Turkey				8	half	Half
13	Namakhvani Cascade (Tvishi HPP)	KEPCO-NurolSK International	South Korea-Turkey	100	403.5	250,000,000	2009 December 8	2011 2nd half	2017 2nd Half
14	Namakhvani Cascade (Namakhvani HPP)	KEPCO-NurolSK International	South Korea-Turkey	250	928	500,000,000	2009 December 8	2011 2nd half	2017 2nd Half
15	Namakhvani Cascade (Zhoneti HPP)	KEPCO-NurolSK International	South Korea-Turkey	100	346	250,000,000	2009 December 8	2011 2nd half	2017 2nd Half
16	Lukhuni HPP 1	Rusmetali LLC	Georgia	10.8	66.07	18,178,218	2009 July 07	2015 May 01	2019 December 01
17	Lukhuni HPP 2	Rusmetali LLC	Georgia	12	73.58	20,198,020	2009 July 07	2010 August 01	2014 December 01
18	Lukhuni HPP 3	Rusmetali LLC	Georgia	7.5	46.03	12,623,762	2009 July 07	2020 May 01	2024 December 01
19	Kvirila HPP	Zoti Hydro	Chezh Republic	5.2	22	11,611,650	2009 May 28	2010 December 01	2015 December 01
20	Zoti HPP	Zoti Hydro	Chezh Republic	36	144	80,388,350	2009 May 28	2010 December 01	2015 December 01
21	Nenskra Cascade	Georgian Railway Construction Ltd	Georgia		438	1200	805,000,000	2010 June 11	
22	Tekhuri Cascade	Kolin Construction, Tourism, Industry and trading Co. Inc.	Turkey	105.7	490	150,000,000	2010 November 10	2010 November 10	2014 May 10
23	Tekhuri Cascade (Nobulevi HPP)	Kolin Construction, Tourism, Industry and trading Co. Inc.	Turkey	23.6	110	33,000,000	2010 November 10	2011 September	2013 August 10
24	Tekhuri Cascade (Tskhimra HPP)	Kolin Construction, Tourism, Industry and trading Co. Inc.	Turkey	33.4	155	45,000,000	2010 November 10	2011 September	2014 May 10
25	Tekhuri Cascade	Kolin Construction,	Turkey	23.3	105	37,000,000	2010 November	2011	2014 May 10

	(Erjia HPP)	Tourism, Industry and trading Co. Inc.					10	September	
26	Tekhuri Cascade(Lechexa HPP)	Kolin Construction, Tourism, Industry and trading Co. Inc.	Turkey	25.4	120	35,000,000	2010 November 10	2011 September	2014 February 10

**Map of the Project Sites: Alazani-Iori and Rion River Basins**



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